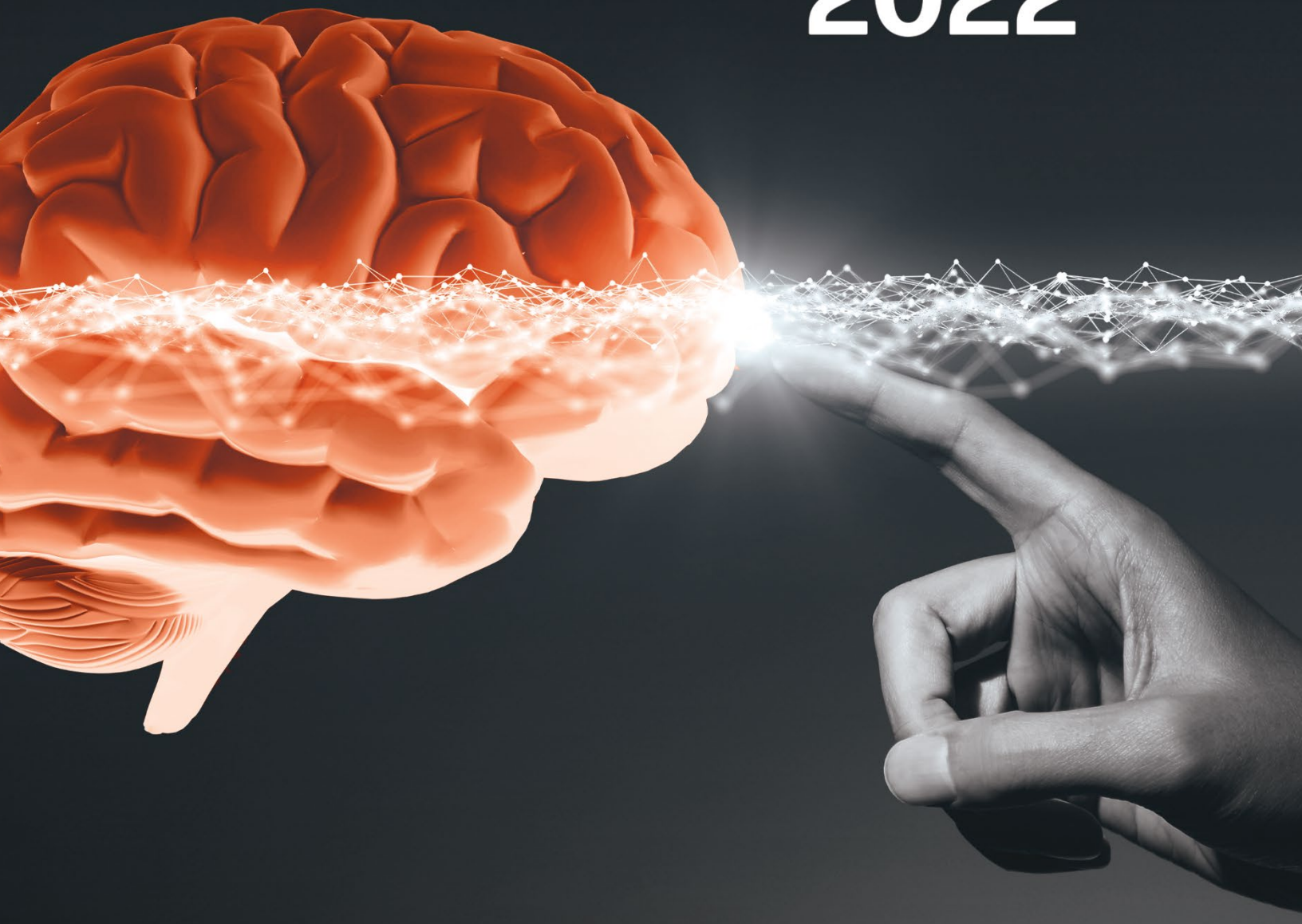
UTRGV | UT Health Rio Grande Valley | School of Medicine

Research Symposium 2022



International Conference on Health Disparities: Treatment and Recovery from Opioid and Alcohol Use Disorders and Related Comorbidities (ICHD-Recover)

Mission Event Center

200 N SHARY RD, MISSION, TX 78572

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Event Sponsored by the Office of the Associate Dean of Research, School of Medicine
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Event Planning Committee Chair: Jorge Teniente, Director of Special Programs, School of Medicine, UTRGV

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Ms. Karen R. Rodriguez, Data Coordinator, Behavioral Health Solutions

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Dr. Baron S. Ekeledo, Internal Medicine Resident, SOM
Ms. Sonal Jha, SOM Medical Student, MS2
Mr. Noel Garza, SOM Medical Student, MS

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Dr. Ihsan Salloum, Chair of the Department of Neuroscience and Scientific Program Planning Committee Chair
Mr. Jorge L. Teniente, Chair of the Event Planning Committee, ADR-SOM
Mr. Travis McAlpine, Senior Director of Development, UTRGV

Dr. Michael B. Hocker, Dean of the University of Texas Rio Grande Valley School of Medicine, assumed his post on June 28, 2021.

Dr. Hocker comes to the Rio Grande Valley from the Medical College of Georgia (MCG) at Augusta University where he served as the senior associate dean and designated institutional official (DIO) of graduate medical education. In that role, Dr. Hocker oversaw 51 residency and fellowship programs. Previously, he served as the Vice-Chair of Operations for Emergency Medicine and assistant DIO for graduate medical education. He also holds the J. Harold Harrison M.D. Distinguished Chair in Emergency Medicine.

Dr. Hocker is a master clinician and Board certified in Emergency Medicine, he completed his internship at the UC Davis East Bay Surgical Program in Oakland, California, and his residency training in emergency medicine at the University of Massachusetts.

A former U.S. Navy flight surgeon, he graduated from Ft. Lewis College in Durango, Colorado and earned his Doctor of Medicine degree from the University of Colorado School of Medicine.

Dr. Hocker and his family are excited about joining the UTRGV community and making South Texas their home, where they will be closer to his mother, Jean, and stepfather, Richard, who currently live in Harlingen.

WELCOME TO THE 5th ANNUAL UTRGV SOM Research Symposium

On behalf of our faculty, staff, and students, I am pleased to welcome you to the UTRGV School of Medicine's Fifth Annual Research Symposium. We are excited to bring this program to the Valley and to showcase the outstanding research done by investigators at the University as well as our national and international partners. The oral and poster presentations that you will experience today are examples of the excellent work that these researchers have completed. They provide an expansion of knowledge in these key disciplines and demonstrate the diligence and commitment of these individuals in their pursuit of science. With the theme of "International Conference on Health Disparities" this symposium aims to showcase the work done by our researchers from a broad array of disciplines (academia, community, health care) to identify gaps and/or solutions to respond to multi-faceted heath and health disparity issues impacting minority and underserved populations across the Nation and Worldwide.

One of the key missions of a medical school is the sponsorship and conduct of research activities, including basic, translational, and clinical research. It is through research that we engage our students in critical thinking and in enhancing scientific curiosity. Research serves as the basis for evidence on the quality and efficacy of clinical care and for enhancing patient safety. Discoveries made in the laboratories of our basic scientists assist in the understanding of mechanisms in both health and disease and offer the foundation for translating these findings into clinical interventions. Research provides public visibility for a medical school and contributes to its reputation as an institution of higher learning.

It is with these key principles in mind that I once again welcome you to this Research Symposium. Thank you for attending and for participating with us in this important scholarly activity. Please enjoy the day and the program.

Michael B. Hocker, MD, MHS
Dean, School of Medicine

PROGRAM SCHEDULE

FRIDAY SEPTEMBER 9, 2022

7:45-8:30 AM
LOBBY/

REGISTRATION + NETWORKING BREAKFAST

RUBY RED BALLROOM
8:30-8:45 AM
RUBY RED BALLROOM

WELCOME & OPENING REMARKS

DR. IHSAN SALLOUM, Scientific Committee Chair, UTRGV

DR. MICHAEL B. HOCKER, Dean, School of Medicine, UTRGV

8:50-9:40 AM
RUBY RED BALLROOM

KEYNOTE LECTURE

JUAN MEZZICH, MD, Ph.D.
Icahn SOM at Mount Sinai, New York
Total Health and Total Person Approaches to deal with Behavioral Health

9:45-11:05AM
RUBY RED BALLROOM

SYMPOSIUM 1

Theme: Determinants of Health & Health Disparities: Cultural, Social, Contextual, Environment & Ecological Factors

9:45

IHSAN SALLOUM, MD, MPH

UTRGV SOM, Neuroscience

Screening, Brief Intervention, Referral to Treatment (SBIRT): An effective prevention and intervention strategy for alcohol and other substance use disorders

10:05

GLADYS MAESTRE, MD, Ph.D., NAAD
UTRGV SOM, Neuroscience
Philosophical Contributions to Health Disparities

10:25

MARGOT GAGE WITVLIET, Ph.D. and CHIUNG-FANG CHANG, Ph.D.
Lamar University
The impact of virtual learning on health literacy: lessons from a virtual townhall held by the Lamar University Recovery and Resilience Academy

9:45-11:05 AM
LEMON HALL

BIOMEDICAL RESEARCH ORAL PRESENTATIONS- CONCURRENT SESSION 1

9:45-11:05 AM
MANDARIN HALL

BIOMEDICAL RESEARCH ORAL PRESENTATIONS- CONCURRENT SESSION 2

TITLE SPONSOR LECTURE
JOHN DYBEN, DHSC, MCAP, CMHP

11:10 AM-12:30 PM
LEMON HALL

Chief Clinical Officer, Origins Behavioral Healthcare
Residential Treatment of Substance Use Disorder and Related Comorbidities in Older Adults.
In his role as Chief Clinical Officer, John provides supervisory and clinical oversight to all of Origins Behavioral HealthCare's programs. John continually builds upon his academic expertise through research and nationwide speaking engagements on addiction, spirituality, and related topics.

CONCURRENT BIOMEDICAL LECTURES

11:10 AM-12:30 PM
LEMON HALL

JOSE A. TORRES-RUIZ, Ph.D.
Ponce Health Sciences University- Puerto Rico
Challenges of health disparities research and training in diabetes, obesity and hypertension

MOSHAHID KHAN, Ph.D.- *Live Zoom*
University of Tennessee Health Science Center
Understanding the Mechanisms of the UBTF E210K Neuroregression Syndrome

Moderator: Dr. Manish Tripathi

BIOMEDICAL RESEARCH ORAL PRESENTATIONS- CONCURRENT SESSION 3

11:10 AM-12:30 PM
MANDARIN HALL

NETWORKING LUNCH

12:30-1:30 PM
RUBY RED BALLROOM

1:30-2:20 PM
RUBY RED BALLROOM

KEYNOTE LECTURE
ROGER WEISS, MD
Harvard Medical School- McLean Hospital
Treatment of Opioid Use Disorders
Zoom Video/ Live Q&A Session

1:30-2:20 PM
LEMON HALL

BIOMEDICAL RESEARCH ORAL PRESENTATIONS- CONCURRENT SESSION 4

2:25-3:45 PM
RUBY RED BALLROOM

SYMPOSIUM 2
Title: Health Disparities & Access: Bringing Treatment & Research into the Community.
(Technology transfer, SIB/SBIRT, Smart phone and telehealth & integration into primary care.)

2:25	**LARA RAY, Ph.D.-** *Zoom Video/ Live Q&A Session* **UCLA** *Clinical Trials for Alcohol Use Disorders in Diverse Communities*
2:51	**DEEPU GEORGE, Ph.D.** **UTRGV SOM, Family Medicine** *Primary Care Behavioral Health Integration: Shifting to whole-person care, one consult at a time*
3:07	**RODRIGO NAVARRETTE, Ph.D. -National Institute of Psychiatry. Mexico City, Mexico**
2:25-3:45 PM **LEMON HALL**	**CONCURRENT WORKSHOPS** **Session 1:** *Research Grant Proposals- Pre-Award Support* Dr. Jennifer Cahn, Grant Research Officer, UTRGV SOM **Session 2:** *Research Grant Proposals- Post-Award Support* Ms. Veronica Vera, Sr. Grant Research Coordinator, UTRGV SOM **Session 3:** *Medical Students' Research Learning- Research Electives and Funding Support* Dr. Kelsey Baker, Assistant Professor, UTRGV SOM
2:25-3:45 PM **MANDARIN HALL**	**COMMUNITY ENGAGEMENT PANEL DISCUSSION** *Featured Speakers:* **Dr. Christian Corrales**- *Asst. Vice President, Community Engagement, UTRGV* **Dr. Luis Torres-Hostos**- *Dean, UTRGV School of Social Work* **Dr. John Ronnau**- *Sr. Associate Dean, Community Health Partnerships, UTRGV SOM* **Dr. Linda Nelson-** *Assistant Professor, Senior Director Clinical Operations* **Moderator: Dr. Gladys Maestre**
3:50-5:00 PM **VALENCIA BALLROOM**	**JUDGING OF BIOMEDICAL RESEARCH POSTERS** ***Poster presenters must be at their posters for Q&A with Judges***
6:00-8:00 PM **LOBBY**	**NETWORKING RECEPTION**

SATURDAY SEPTEMBER 10, 2022

7:45-8:30 AM **LOBBY**	**REGISTRATION + NETWORKING BREAKFAST**
8:30-8:45 AM **RUBY RED BALLROOM**	**WELCOME and REVIEW OF SECOND DAY PROGRAM** **DR. IHSAN SALLOUM- Scientific Committee Chair**

8:50-9:40 AM
RUBY RED BALLROOM

KEYNOTE LECTURE
RAUL CAETANO, MD, PH.D.
Pacific Institute for Research & Evaluation, UT Houston School of Public Health
The Epidemiology of Alcohol Use and Misuse among U.S. Ethnic Minorities

9:45-11:05 AM

SYMPOSIUM 3

Title: Health Disparities, Adversity, Resilience, and Individual Determinants of Health.

9:45

TAMMY CHUNG, Ph.D.- *via Zoom Video/ Live Q&A Session*
Rutgers University
Addressing Racial/Ethnic Disparities in Addiction: A Multilevel Developmental Perspective

10:05

ORRIN WARE, Ph.D.-University of North Carolina
Higher stress during admission predicts shorter treatment retention in residential treatment

10:25

JUANA ESCAREÑO, BAS, CHWI, CHW and EDUARDO GANDARA, DrPH, MPH – South Texas Area Health Education Centers
Reducing Opioid Use Disorder Health Inequities within Latino Communities in South Texas.

10:45

MONICA HERNANDEZ SANCHEZ, LCSW-S, ACPS, ICPS, PSS, CCTSA
Behavioral Health Solutions of South Texas, Hidalgo County, TX
Utilizing Support Services to Reduce Health Disparities

11:10 AM -12:30 PM
RUBY RED BALLROOM

ICHD SCHOLARS ORAL PRESENTATIONS

12:30-1:30 PM
RUBY RED BALLROOM

NETWORKING LUNCH

1:30-2:20 PM
RUBY RED BALLROOM

KEYNOTE LECTURE *-Zoom Video*

CLAUDE ROBERT CLONINGER, MD, Ph.D.- Professor Emeritus- Washington University School of Medicine

Psychobiology of Well-being & Person-centered Health Care

2:25-3:45 PM
RUBY RED BALLROOM

SYMPOSIUM 4

Theme: Community Engagement & Recovery

2:25

LUIS TORRES-HOSTOS, Ph.D. -UTRGV, Dean, School of Social Work
The Role of Social Determinants of Health in the Treatment and Recovery from Opioid and Alcohol Use Disorders and Related Comorbidities: Lessons Learned Over 33 Years of Clinical and Community Engagement.

2:50	**NOE GARZA, DO. – UTRGV SOM** *Community Engagement*
3:10	**ROBERT GUEVARA, MD & HILDEBRANDO MIRELES III, LPC-S, LCDC-I** **Tropical Texas Behavioral Health, TX** *Linking Clients to Substance Use Disorder Treatment at TTBH Through Outreach Screening and Referral to Treatment (OSAR).*
3:30	**EDDIE OLIVAREZ -Hidalgo Co. Health & Human Services** *Local Assets in improving access to Healthcare / Safety - Stop Focusing on Barriers*
3:50-5:00 PM RUBY RED BALLROOM	**AWARDS & CLOSING REMARKS**

POSTER EXHIBIT- Valencia Hall

FRIDAY SEPTEMBER 9, 2022

8:00 AM- 5:00 PM	**Viewing available for Biomedical Posters Exhibit**
12:30-1:30 PM	**Meet and Greet**
3:50-5:00 PM	**JUDGING OF BIOMEDICAL RESEARCH POSTERS** **Poster presenters must be at their poster for Q&A with Judges**

SATURDAY SEPTEMBER 10, 2022

8:00 AM- 5:00 PM	**Viewing available for Biomedical Posters Exhibit**
12:30-1:30 PM	**Meet and Greet**

Note: Exhibitor's booths will be in Lobby Area immediately outside the Poster Exhibit in the Valencia Hall

Biomedical Research Oral Presentations- Concurrent Session 1

September 9th, 9:45-11:05 AM

LEMON HALL- Moderator: Dr. Sara Reyna

Changho Yi *Resident*	Postoperative Delirium after Hip Arthroplasty in the Elderly
Demba Fofana *Faculty*	Self-inflicted Injuries Racial-Based Differences in Substance Abuse and in Potential Years of Life Lost
Neeraj Chauhan *Faculty*	Development of Surgery Guided NIR Fluorescent Probe Nanoparticles for Cancer Imaging
Pranav *Post Doc*	L(D)-tyrosine-mediated one-step chiral graphene production for chirality-dependent sensing

Biomedical Research Oral Presentations- Concurrent Session 2

September 9th, 9:45 -11:05 AM

MANDARIN HALL- Moderator: Dr. Mohammed Sikander

Mariana M. Mendez *Graduate Student*	Eating patterns of patients with Type 2 Diabetes Mellitus and their houshold first degree relatives. A cross sectional study from CEDIAMET
Ryan K. Ajgaonkar *Medical Student*	An NGQD Based Diagnostic Tool for Pancreatic Cancer
Semenawit Burka *Resident*	Recognizing Fatal Electrocardiography Rhythm Changes in a patient with Severe Hyperkalemia and Prevention of Cardiac Arrest with medical management in small hospitals
Toluwani Akinpelu *Medical Student*	Cardiac Tamponade: Innovative Sternotomy Simulation Model for Training Pediatric Cardiac Intensive Care Team

Biomedical Research Oral Presentations- Concurrent Session 3

September 9th, 11:10 AM-12:30 PM

MANDARIN HALL- Moderator: Dr. Juan C. Lopez Alvarenga

Ismael Perez *Graduate Student*	A neurodevelopmental perspective to improve innovation in preventive treatment of substance use disorders
Michael Machiorlatti *Faculty*	Trusted Sources of Health Information During the COVID-19 Pandemic
Rodolfo Singleterry *Medical Student*	Stroke mimics: a challenge for the clinician
Tamara Al Rawwad *Faculty*	The Role of Community Pharmacists in the provision of Medication for Opioid Use Disorder Treatment in Rio Grande Valley

Biomedical Research Oral Presentations- Concurrent Session 4

September 9th, 1:30 -2:20 PM

LEMON HALL- Dr. Michael Machiorlatti

Keshav Taruneshwar Jha *Graduate Student*	Synthesis, Biological Evaluation and Docking studies of Substituted 4-Thiazolidinone Derivatives as Antioxidant, Anti-inflammatory and Anticancer agents
Denis Gutierrez *Resident*	Increasing opioid overdose among Hispanic young population in the borders of the USA and Mexico. Imperative to work with first responders and proper use of Narcan
Jessica Flores *Medical Student*	UTRGV Student Run Clinic: The Past, The Present, and The Future
Juan C. Lopez-Alvarenga *Faculty*	Neutralizing anti-RBD fraction for SARS-CoV-2 is associated with the interaction waist circumference and sex. An ESFUERSO preliminary report on university students

ICHD Scholars Oral Presentations

September 10th, 11:10 AM-12:30 PM

RUBY RED BALLROOM

Cristina Bañuelos, Ph.D. *National Institute on Aging*	Basal Forebrain Neuronal Systems in Normal Cognitive Aging
Francisco Barrera, MD *Harvard Medical School*	Weight Changes in Major Depressive Disorder: A Systematic Review and Meta-analysis of Prospective Studies
Monique T. Cano, Ph.D. *UC San Francisco*	Factors associated with smoking in low-income persons with and without chronic illness
Ilya Blokhin, Ph.D. *University of Miami*	Impairment of Splicing of Non-coding RNAs in the Brain of Patients with Alcohol Use Disorder
Brandi Quintanilla, DO *UT Health Houston*	Kappa Opioid Receptor Plasma Levels are Associated with Sex and Diagnosis of Major Depressive Disorder but not Response to Ketamine
Manuel A. Gardea Resendez, MD ***Zoom Video*** *Mayo Clinic*	Illness trajectory from prodromal symptoms to incident bipolar disorder and schizophrenia
David Martinez Garza, MD ***Zoom* Video** *Harvard Medical School*	Neglected Among the Neglected: Nicotine Use Disorder Among Latinos

THANK YOU!

LIST OF PARTICIPATING INSTITUTIONS

- Baylor College of Medicine, Houston, Texas
- Behavioral Health Solutions of South Texas, Pharr, Texas
- Doctors Hospital at Renaissance, Edinburg, Texas
- Harlingen School of Health Professions, Harlingen, Texas
- Harvard Medical School, Boston, Massachusetts
- Harvard T.H. Chan School of Public Health, Boston, Massachusetts
- Hidalgo County Health & Human Services, Hidalgo Co, Texas
- Icahn School of Medicine at Mount Sinai, New York, New York
- Instituto Nacional de Pediatria- Mexico
- ISF College of Pharmacy, Punjab, India
- La Universidad Iberoamericana Ciudad de Mexico (IBERO), Tijuana, Mexico
- Lamar University, Beaumont, Texas
- National Institute of Advanced Industrial Science & Technology (AIST), Tsukuba, Japan
- National Institute of Aging, National Institutes of Health
- Origins Behavioral Healthcare + Origins Recovery, Florida/ Texas
- Pacific Institute for Research & Evaluation, Prevention Research Center, Berkeley, California
- Ponce Health Sciences University, Ponce, Puerto Rico
- Rutgers University, New Brunswick, New Jersey
- South Texas Academy for Medical Professions, Olmito, Texas
- South Texas Health Systems, Department of Pathology/Laboratory, McAllen, Texas
- Tropical Texas Behavioral Health, Harlingen, Texas
- The University of Texas Health Science enter at Houston, Houston, Texas
- Universidad Autonoma de Nuevo Leon, Departamento de Bioquímica y Medicina Molecular, Nuevo León, México
- UAT-UAMRA, Department of Molecular Biology, Reynosa, Tamaulipas, México
- Universidad México Americana del Norte AC, Escuela de Medicina, Reynosa, Tamaulipas, México
- University of California- Los Angeles, Los Angeles, California
- University of California- San Francisco, San Francisco, California
- University of North Carolina, Chapel Hill, North Carolina
- University of Tennessee Health Science Center, Memphis, Tennessee
- University of Texas Rio Grande Valley, Edinburg, Texas
- University of Texas Rio Grande Valley School of Medicine, Edinburg, Texas
- UT Health Science Center at San Antonio, San Antonio, Texas
- Washington University School of Medicine, St. Louis, Missouri

SPECIAL THANKS!

Abstract Reviewers

Presentation Judges

Oral Session Moderators

Staff Volunteers

Student Volunteers

On behalf of the 2021-22 UTRGV SOM Research Symposium Scientific and Event Planning committees, we thank each of you who attended the conference. A special thanks to The Office of the Associate Dean of Research at UTRGV-SOM, NIH-NIDA, UTRGV's Department of Neuroscience, Origins Behavioral Healthcare, The City of Mission, and all our donors and sponsors.

Funding for this conference was made possible (in part) by 1 R13 DA056203-01 from the National Institute on Drug Abuse (NIDA). The views expressed in written conference materials or publications and by speakers and moderators do not necessarily reflect the official policies of the Department of Health and Human Services; nor does mention by trade names, commercial practices, or organizations imply endorsement by the U.S. Government.

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Origins Behavioral HealthCare provides comprehensive and individualized substance use and mental health disorder treatment programs for adults, including those with co-occurring disorders. Our treatment approach integrates contemporary addiction medicine and evidence-based clinical strategies with a profound immersion in timeless recovery principles. As one of the nation's premier behavioral health organizations, Origins embraces both the patient and the family system in order to provide a complete and thorough recovery experience.

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2022 KEYNOTE SPEAKERS

JUAN MEZZICH, MD, PH.D.

Icahn SOM at Mount Sinai, New York

Total Health and Total Person Approaches to deal with Behavioral Health

Dr. Mezzich was the president of the World Psychiatric Association (WPA) from 2005 to 2008. He currently works as the Professor of Psychiatry and Director at the Division of Psychiatric Epidemiology and International Center for Mental Health at the Mount Sinai School of Medicine, New York University. During his life he was awarded the Simón Bolivar Award of the American Psychiatric Association, Doctor Honoris Causal at Athens University (Greece), Cordoba University (Argentina), and University of Cluj-Napoca (Romania). He also received an Honorary Professorship at Cayetano Heredia Peruvian University and the University of Belgrade. Mezzich is author/coauthor of over 200 scientific journal articles and book chapters and wrote more than 20 books and monographs and is the Editor/coeditor of Psychopathology, Basel, and Psiquiatría y Salud Integral, New York. He is also an editorial board member of 12 other psychiatric journals in the Americas and Europe. The present focus of his research and teaching is Person-centered Psychiatry and Medicine.

Roger D. Weiss, M.D.

Chief, Division of Alcohol, Drugs, and Addiction, McLean Hospital, Belmont, MA

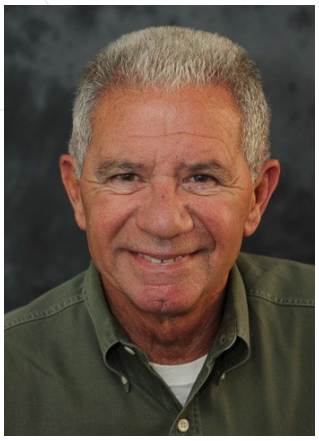
Professor of Psychiatry, Harvard Medical School

Treatment of Opioid Use Disorders

Roger D. Weiss, M.D., is Professor of Psychiatry at Harvard Medical School and Chief of the Division of Alcohol, Drugs, and Addiction at McLean Hospital in Belmont, Massachusetts. His career has focused on treatment and clinical research with substance-dependent patients, particularly those with co-occurring psychiatric illness. He has been Principal Investigator on numerous NIDA or NIAAA grants, and has developed Integrated Group Therapy, an evidence-based treatment for patients with co-occurring bipolar disorder and substance use disorders. Dr. Weiss led a multi-site national study of the treatment of prescription opioid dependence, as part of the NIDA Clinical Trials Network, and is currently a Lead Investigator on the multi-site Retention, Duration, Discontinuation (RDD) study, under the auspices of the NIH HEAL initiative and the NIDA Clinical Trials Network; this trial is examining optimal treatments for opioid use disorder.

Dr. Weiss has authored over 400 articles and book chapters as well as 4 books, is a member of numerous journal editorial boards, and has participated in a number of prominent national committees, including serving as Vice Chair of the American Psychiatric Association Task Force on Practice Guidelines for Patients with Substance Use Disorders. He also has served as substance use consultant to the Boston Red Sox. He was named a Member of Honor by the Spanish Society for Dual Disorders in 2011, and has received numerous other awards, including the H. David Archibald Award for Outstanding Research and/or Practice in the Addictions from The Centre for Addiction and Mental Health in Toronto (2007), the Jack H. Mendelson Research Award from McLean Hospital (2012), the Dan Anderson Research Award from the Hazelden Foundation (2012), and the Anne M. Cataldo Excellence in Mentoring Award from McLean Hospital (2014).

2022 KEYNOTE SPEAKERS



Raul Caetano, MD, PHD

Senior Research Scientist, Pacific Institute for Research & Evaluation
Professor of Epidemiology, Emeritus, UT Houston School of Public Health
The Epidemiology of Alcohol Use and Misuse among U.S. Ethnic Minorities

Raul Caetano, MD, MPH, PhD is a psychiatrist and epidemiologist who has worked in public health for about 35 years. A native of Brazil, Dr. Caetano's MD is from the School of Medical Sciences, State University of Rio de Janeiro. His MPH (behavioral sciences) and his PhD (epidemiology) are from the University of California at Berkeley. He was Dean of the Southwestern School of Health Professions at the University of Texas Southwestern Medical Center from 2006 to 2014, and Regional Dean and Professor of Epidemiology, Dallas Regional Campus, University of Texas School of Public Health from 1998 to 2014. He has been a Senior Research Scientist at the Prevention Research Center of PIRE since January 2015.

Dr. Caetano has written extensively about alcohol problems among U.S. ethnic minorities, especially among Hispanics. Other areas of research are psychiatric diagnosis and classifications, development of criteria for diagnosis of alcohol dependence, and the association between drinking and intimate partner violence. He has conducted numerous general population and clinical studies of alcohol problems among Whites, Blacks and Hispanics, and has more than 250 papers published in the peer reviewed literature. His research has been consistently supported by the NIH for over 30 years.

Dr. Caetano received the Lifetime Achievement Award from the Research Society on Alcoholism in 2016. Most recently, In 2021, Dr. Caetano received the Dora Goldstein Diversity in Sciences Award, which recognizes an individual who has demonstrated excellence and creativity in alcohol research, and a commitment to diversity and mentoring throughout his or her career.

Claude Robert Cloninger, MD, PhD

Professor Emeritus of Psychiatry, Washington University School of Medicine, St. Louis, MO
Psychobiology of Well-being & Person-centered Health Care

C. Robert Cloninger is Director of the Anthropedia Institute and Professor Emeritus at Washington University in St. Louis. He was Wallace Renard Professor of Psychiatry, Professor of Genetics, Professor of Psychological and Brain Sciences, and Director of the Sansone Family Center for Well-Being at Washington University School of Medicine in St. Louis until July 2019. The Anthropedia Institute is the research and advisory component of the Anthropedia Foundation, a non-profit organization dedicated to development of human well-being through initiatives in health care and education. He is widely cited and honored for his innovative biopsychosocial research that spans the genetics, neurobiology, development, psychology, brain imaging, and assessment of personality and psychopathology. His personality inventories have been widely used around the world. He is one of the most highly cited scientists in the world across all fields (top 0.01 percentile).

He received his B.A. with High Honors and Special Honors in Philosophy, Psychology, and Anthropology from the University of Texas at Austin, 1966. He received his M.D. from Washington University in 1970, and Honorary Doctorates from the University of Umea in 1983 (MD in Genetics) and University of Gothenburg in 2012 (PhD in Psychology).

Dr. Cloninger has published ten books and over 600 articles in psychiatry, psychology, and genetics. His recent books include Feeling Good: The Science of Well-Being by Oxford University Press, Origins of Altruism and Cooperation by Springer, and Personality and Psychopathology by American Psychiatric Press. Among his many awards, Dr. Cloninger has received the American Psychiatric Association's Adolf Meyer Award (1993) and Judd Marmor Award (2009), and lifetime achievement awards from the American

Society of Addiction Medicine (2000) and the International Society of Psychiatric Genetics (2003). He received the Oskar Pfister Award in 2014 from the American Association of Professional Chaplains and the American Psychiatric Association for his contributions to dialogue between psychiatry, religion, and spirituality. He is a fellow of the American Academy for the Advancement of Science and of the National Academy of Medicine in the USA.

FEATURED SPONSOR SPEAKER

John Dyben, DHSC, MCAP, CMHP

Chief Clinical Officer, Origins Behavioral Healthcare

Residential Treatment of Substance Use Disorder and Related Comorbidities in Older Adults.

In his role as Chief Clinical Officer, John provides supervisory and clinical oversight to all of Origins Behavioral HealthCare's programs. John continually builds upon his academic expertise through research and nationwide speaking engagements on addiction, spirituality, and related topics. John's academic training includes a Bachelor of Science in Psychology, a Master of Arts in Conflict Management, a Master of Science in Management, a Doctor of Health Science, and postgraduate studies in psychology, philosophy, and religion. John is a Master Certified Addictions Professional and a Certified Mental Health Professional in the State of Florida. He is an Internationally Certified Alcohol and Drug Counselor and a Substance Abuse Professional meeting all Federal DOT qualifications. John is a musician, writer, and a private pilot, and he enjoys spending time with his family.

INVITED PLENARY SPEAKERS

Tammy Chung, Ph.D

Professor of Psychiatry

Director, Center for Population Behavioral Health

Institute for Health, Health Care Policy and Aging Research

Rutgers, The State University of New Jersey

Addressing Racial/Ethnic Disparities in Addiction: A Multilevel Developmental Perspective

Dr. Chung's research focuses on adolescent and young adult substance use: assessment and diagnosis, clinical course, and intervention. Current projects evaluate the use of mobile technology for substance use assessment and intervention, and examine racial disparities in risk for substance use as a co-investigator on an NIH-funded project to conduct secondary analyses of the Adolescent Brain and Cognitive Development (ABCD Study).

Juana T. Escareño, BAS, CHWI, CHW

University of Texas Health San Antonio - South Texas Area Health Education Center Program (AHEC)- Academic Program Coordinator, Community Health Worker Instructor, Community Health Worker

Reducing Opioid Use Disorder Health Inequities within Latino Communities in South Texas

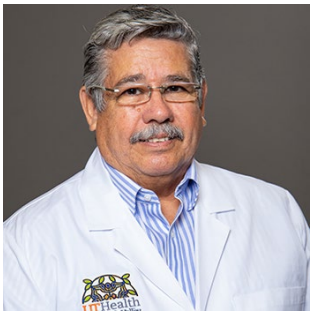
Juana T. Escareño is a certified community health worker instructor (or in Spanish un Instructor de Promotor o Promotora de Salud) for the University of Texas Health San Antonio - South Texas Area Health Education Center Program (AHEC), Lower Rio Grande Valley AHEC. She has over 20 years' experience within the University of Texas System. For the past 11 years, she has been instrumental in planning, implementing, and monitoring student health professional education programs. She serves as a mentor of students, community health workers, volunteers, consultants, and contractors of various educational programs. As a bilingual community health worker instructor (CHWI), Ms. Escareño teaches and translates materials between English and Spanish. She continues to deliver the Community Health Workers certification courses and continuing education workshops to promote a healthier South Texas.

Eduardo Gandara, DrPH, MPH

University of Texas Health San Antonio - South Texas Area Health Education Center Program (AHEC)- Postdoctoral Fellow & Senior Research Coordinator

Reducing Opioid Use Disorder Health Inequities within Latino Communities in South Texas

Eduardo Gandara, DrPH, MPH has a strong passion to help underserved communities. His interests include connecting underserved populations to prevention-based programs as well as developing and implementing community-based interventions with the help of Community Health Workers/Promotoras. Dr. Gandara is also interested in assessing the role that faith, religiosity, and spirituality have on health as well as delivering prevention programs within Latino and African American churches. Dr. Gandara currently works as a Post-Doctoral Fellow at the University of Texas at San Antonio and as a Senior Research Coordinator with the South Texas Area Health Education Center where he works with Community Health Workers/Promotoras and COVID-19 related initiatives.



Noe Garza, DDS, MPH, DPH

Associate Research Scientist, Dept. of Neuroscience, UTRGV-SOM

Community Engagement

NEED BIO

Deepu George, Ph.D.

Associate Professor - Department of Family Medicine
Vice chair of research - Department of Family Medicine , UTRGV- SOM
Primary Care Behavioral Health Integration: Shifting to whole-person care, one consult at a time

Deepu George is an Associate Professor of Family Medicine, with a focus on workforce development strategies to improve the reach of Primary Care Behavioral Health model. Through a longitudinal clinical curriculum, he and his team leads family physicians in training through a behavioral medicine curriculum, aimed at increasing point-of-delivery skills to implement evidence-based behavioral interventions. He has also forged a series of partnerships with mental health programs at UTRGV to establish a Primary Care Behavioral Health certificate program.

Robert Guevara, M.D., Ph.D.

Psychiatrist and Substance Abuse Medical Director, Tropical Texas Behavioral Health
Fellow of the American Board of Preventive Medicine - Addiction
Fellow of the American Board of Psychiatry and Neurology - Adult Psychiatry
Fellow of the American Board of Family Medicine
Linking Clients to Substance Use Disorder Treatment at TTBH Through Outreach Screening and Referral to Treatment (OSAR).

Dr. Guevara was born and raised in the Rio Grande Valley. He earned his medical degree from the University of Texas Medical Branch in Galveston in 2004 and completed a dual residency in psychiatry and family medicine at the University of Oklahoma in 2009. Dr. Guevara also completed a PhD in leadership studies from the Our Lady of the Lake University in 2014 and a Master Degree in Clinical Informatics from the University of Texas Health Science Center in Houston in 2022. He is currently an adult psychiatrist and and medical director for the Substance Use Disorder Program at Tropical Texas. He previously worked as director of the Substance Abuse Treatment Program at the Veteran's Administration in Harlingen and as an addiction psychiatrist at Origins Recovery Center on South Padre Island. He has 13 combined years of experience in outpatient and inpatient psychiatry, addiction medicine, family medicine and consultation-liaison psychiatry.

Monica Hernandez Sanchez, LCSW-S, ACPS, ICPA, PSS, CCTSA

Deputy Director- Behavioral Health Solutions of South Texas
Utilizing Support Services to Reduce Health Disparities

Monica Hernandez Sanchez is the Deputy Director at Behavioral Health Solutions of South Texas, a non-profit providing support services to individuals, families, and communities to help prevent and treat behavioral health concerns. She is credentialed as a Licensed Clinical Social Worker with board approved supervisor status, is an Advanced Certified Prevention Specialist, a Peer Specialist Supervisor, an Internationally Certified Prevention Specialist and a Certified Clinical Trauma Specialist in Addictions. Monica has focused on filling in gaps in behavioral health related support services and resources through program development and collaborative efforts for the southernmost counties in Texas for over fifteen years. She has served as a Principal Investigator on collaborative projects with Baylor College of Medicine, NYU Silver School of Social Work, and UTRGV.

Moshahid Khan, Ph.D.

Assistant Professor
Department of Neurology
Department of Physical Therapy
University of Tennesse Health Science Center
Understanding the Mechanisms of the UBTF E210K Neuroregression Syndrome

Dr Khan is an Assistant Professor in the Department of Neurology at University of Tennessee Health Science Centre, Memphis USA. Over the past 10 years, Dr Khan is working on regulation and resolution of neuroinflammation and neurodegeneration in experimental models of neurodegenerative diseases. His research investigates the molecular mechanisms that regulate inflammation in the central nervous system that are critical to our understanding of a broad spectrum of neurodegenerative diseases, including Parkinson's disease, Stroke, Alzheimer's disease, multiple sclerosis and Dystonia and to discovering new treatments for these incurable diseases.
Dr Khan has published more than 45 research articles in preclinical CNS models. His research work has been recognized both at national and international levels and has received over 2400 citation scores with h-index 29 by other scientists. Dr Khan's works has been highlighted by Editorial commentary and captured by several electronic media. One of his research article has been featured as Most Cited Brain Research article. Dr Khan been served as Academic Editor for several manuscripts submitted for the peer review process. He is an active member for several professional societies related to neuroscience and officially review the manuscripts, case reports, and Data sheet for several journals of high impact and international repute. He has been enlisted as Lead editor and editorial board member of many journals in his field and has been selected as International reviewer for National Research Foundation, South Africa. Dr Khan's long-term research is committed to unravelling the mysteries of neurodegenerative diseases and to discovering new treatments for these incurable diseases.

Gladys E. Maestre, M.D., Ph.D., NAAD

Professor, Neuroscience and Human Genetics
Director, UTRGV Alzheimer's Disease Resource Center for Minority Aging Research
Co-Director, South Texas Alzheimer's Disease Research Center
Philosophical Contributions to Health Disparities

Gladys Maestre is a physician-scientist of Venezuelan origin, now a Professor at the Department of Neuroscience and Human Genetics at the University of Texas Rio Grande Valley. She is the Director of the Rio Grande Valley Alzheimer's Disease Resource Center for Minority Aging Research and Co-Director of the South Texas Alzheimer's Disease Research Center, both Centers are funded by the National Institute of Aging of the National Institutes of Health. She leads the Maracaibo Aging Study - a study of dementia and other age-related health problems that has followed more than 2,500 subjects since 1998. She continues to build and improve neuroscience research and education in low and middle-income countries, particularly Latin America and the Caribbean.

Hildebrando Mireles, III, LPC-S, LCDC-I

Director of Substance Use Services - Tropical Texas Behavioral Health

Linking Clients to Substance Use Disorder Treatment at TTBH Through Outreach Screening and Referral to Treatment (OSAR).

Hildebrando Mireles III, MA, LPC-S, LCDC-I, PhD Candidate - has served in several mental health authority roles as a care coordinator, ACT Clinical Supervisor, and upper management. He is currently the director of all SUD programs at Tropical Texas Behavioral Health. He manages programs such as OSAR Region 11, Outpatient counseling for adults and youth, Texas Targeted Opioid Response Services, Peer Re-Entry services, Medication Assisted Treatment, Detoxification, Residential, and Federal Projects (United States Probation Office and Bureau of Prisons Services). Hildebrando is a current member of SAS-SIG, President of the Texas Association of Addiction Professionals (TAAP) – Rio Grande Valley Chapter, and first elected SUD Chair of the Texas Behavioral Health Consortium (BHC).

Eduardo "Eddie" Olivarez

Chief Administrative Officer -Hidalgo County Health & Human Services

Local Assets in improving access to Healthcare / Safety - Stop Focusing on Barriers

Eduardo Olivarez has been involved in healthcare for over 35 years focusing on public health priorities, and policy development. His primary objective is to encourage healthier lifestyles, promote stronger families, and improve community health outcomes.

He is currently the Chief Administrative Officer of the Hidalgo County Health and Human Services is responsible for the implementation of various public health & human services programs which include indigent health care, preventative health care, environmental health, infectious diseases prevention, and homeland security preparedness & response.

Eduardo is a U.S. Public Health Service Primary Care Policy Fellow received from the U.S. Department of Health and Human Services. He served as the President of the U.S. / Mexico Border Health Association representing all ten bi-national states on the U.S. / Mexican Border, and Past President of the Texas Association of Local Health Officials'; and served as chairman of Texas DSHS Preparedness Coordinating Council which advised on public health preparedness & response. He is the Recipient of "Texas Medical Association Presidential Award", the "Texas DSHS Preparedness Leadership Award"; recognized as UTRGV's "Distinguished Community Engagement Partner", and received the State of Texas Emergency Management Leadership Award. He has been in hospital administration and overseen each aspect of operating a successful inpatient and outpatient facility. Eduardo has also led a private non-profit Drug treatment / prevention organization which provided services across the Rio Grande Valley. He has also had the honor of presenting at various National and Bi-National professional conferences.

Most importantly, Eduardo has been married for over 35 years to his wife Elida, and truly feels that being the best husband, father, and grandfather is the greatest blessing and honor he has ever received.

Lara Ray, Ph.D.

Shirley M. Hatos Term Chair in Clinical Neuropharmacology
Professor, Department of Psychology
Department of Psychiatry and Biobehavioral Sciences
Brain Research Institute- University of California Los Angeles

Clinical Trials for Alcohol Use Disorders in Diverse Communities

Dr. Lara Ray received her PhD in Clinical Psychology from the University of Colorado at Boulder. Dr. Ray completed a predoctoral clinical internship at Brown University Medical School where she stayed for a postdoctoral fellowship at the Brown University Center for Alcohol and Addiction Studies. After her postdoctoral fellowship, Dr. Ray joined the faculty at the UCLA Clinical Psychology Program where she is now a Full Professor.

Dr. Ray also has academic appointments in the UCLA Department of Psychiatry and Human Behavior and the UCLA Brain Research Institute. Dr. Ray has an active program of research on clinical neuroscience of addiction. Her laboratory combines experimental psychopharmacology with behavioral genetic and neuroimaging methods to ascertain the mechanisms underlying addictive disorders in humans and applying these insights to treatment development. Dr. Ray has over 250 peer-reviewed publications and book chapters. Her program of research is funded by the National Institute on Alcohol and Abuse and Alcoholism (NIAAA) as well as the National Institute on Drug Abuse (NIDA). Dr. Ray has received research excellence awards from the American Psychological Association (APA), the Research Society on Alcoholism (RSA), and the American College on Neuropsychopharmacology (ACNP).

Ihsan Salloum, M.D., MPH

Sujata G. Krishnan Endowed Chair; Joe R. and Teresa Lozano Long Distinguished Professor; Director, Institute of Neuroscience; Founding Chair, Department for Neuroscience, UTRGV School of Medicine

Screening, Brief Intervention, Referral to Treatment (SBIRT): An effective prevention and intervention strategy for alcohol and other substance use disorders

Dr. Ihsan M. Salloum is the Sujata G. Krishnan Endowed Chair in Neuroscience, the Joe R. and Teresa Lozano Long Distinguished Professor in Neuroscience, Founding Chair for the Department of Neuroscience, and Director of the Institute of Neuroscience at UTRGV.

Dr. Salloum received a Doctor of Medicine and Surgery from the University of Bologna and a Master of Public Health from the University of Pittsburgh School of Public Health. He completed his psychiatry residency training at the Chicago Medical School - Rosalind Franklin University and an NIH-sponsored Fellowship in Alcohol Research at UPMC's Department of Psychiatry.

Dr. Salloum's research has been supported continuously by the NIH for over two decades. He served as a member of the National Institute of Health Scientific Review Group and as an Examiner of the American Board of Psychiatry and Neurology. He currently serves on the American Psychiatric Association (APA)'s Workgroup on Research Training. Dr. Salloum is board certified in Psychiatry and Neurology and Addiction Psychiatry and is listed in America's Most Honored Professionals. He is a Distinguished Life Fellow of the APA, an Honorary Member of the World Psychiatric Association, and serves as President of the International College of Person-centered Medicine.

Before joining the UTRGV School of Medicine, Dr. Salloum served as Chief of the Drug and Alcohol Treatment and Research Division and Director of the Addiction Psychiatry Fellowship Program at the University of Miami Miller School of Medicine. He also served as the Director of Research & Education, and Medical Director of the Addiction Medicine Services for the Department of Psychiatry at the University of Pittsburgh Medical Center.

Luis R.Torres- Hostos, Ph.D.

Founding Dean and Professor, School of Social Work, The University of Texas Rio Grande Valley

The Role of Social Determinants of Health in the Treatment and Recovery from Opioid and Alcohol Use Disorders and Related Comorbidities: Lessons Learned Over 33 Years of Clinical and Community Engagement.

Dr. Torres-Hostos is Founding Dean and Professor of the School of Social Work (SSW) at the University of Texas Rio Grande Valley in Edinburg, TX. Under his leadership, the SSW is playing a key role in promoting health equity and social justice in the Rio Grande Valley (RGV) and beyond. Under his leadership, the School of Social Work has increased the number of faculty; expanded community-engaged research in topics impacting RGV communities; strengthened educational initiatives, developed bilingual courses, and increased student enrollment; developed new partnerships with agencies throughout the RGV, including the Latin American consulates; established an Office for International Social Work; and is working on the development of a doctoral program in social work. His research focuses on health disparities, social determinants of health, and community engagement with minority communities, and has been funded by federal, state, and private entities.

Dr. Torres-Hostos has traveled and worked extensively in Latin America and has ongoing collaborations in Mexico, Central America, and Puerto Rico. He serves on local, national and international boards, including the National Alliance for Hispanic Families; SAMHSA's National Hispanic/Latino Mental Health Technology Transfer Center; the American Red Cross South Texas Chapter; and the Red Internacional de Investigación e Intervención en Migración (RIIIM) at Universidad Autónoma de Nuevo Leon, Monterrey, México. A native of Puerto Rico, Dr. Torres has a doctorate in clinical psychology from Fordham University in New York City and over 30 years of clinical, teaching, administrative, and research experience.

Jose Torres-Ruiz, Ph.D.

Chancellor, Ponce Health Sciences College, Ponce, Puerto Rico

Challenges of health disparities research and training in diabetes, obesity and hypertension

Through his tenure at the Ponce School of Medicine he has had the opportunity to play a role in the development of its research enterprise. Along these lines, as Director of the NIH-MBRS Program (1993-2006), Chairman of the Biochemistry Department (1995-present), Director of the Office for Sponsored Research Projects and Programs (1995-1998), and the Associate Dean for Research and Graduate Studies (2000-2010) he has provided the leadership for the coordination, management, and administration of multifaceted research programs as well as other research related activities. Dr. Torres-Ruiz is currently the Vice President for Academic Affairs for the Ponce Health Sciences University. From the beginning of his career, his research interests have focused on elucidating the mechanisms of protein folding and the mode of action of Molecular Chaperones/Heat Shock Proteins from prokaryotic as well as eukaryotic organisms. Molecular Chaperones have proven to have a fundamental role in protein folding and, therefore, a wide range of biological processes including cell cycling and cell survival under pathological conditions such as cancer. More recently, Dr. Torres-Ruiz was named the Principal Investigator of the Puerto Rico Site for the "Trial to Prevent Insulin Dependent Diabetes in Genetically at Risk (TRIGR) Program. This randomized multicenter effort intends to determine whether a delay in the in the exposure of babies to intact protein can reduce the risk of developing Type I Diabetes in children who are genetically predisposed in getting Diabetes. Since 1992, Dr. Torres-Ruiz has served as a scientific reviewer for a variety of programs managed through the National Institutes of Health (NIH), the National Science Foundation (NSF), the Department of Defense (DOD), and the Howard Hughes Foundation. In

2001 he was elected President of the MARC/MBRS Program Directors Organization. He is the PI of the NCI U-56 Ponce School of Medicine/Moffitt Comprehensive Cancer Center Partnership which was incepted in 2006. The main intention of this initiative is to create the basic infrastructure for the establishment and expansion of a research and educational center in cancer to serve the south region of the city of Ponce in Puerto Rico. Dr. Torres-Ruiz is also the Program Director of two research infrastructure initiatives sponsored by the National Center for Research Resources (NCRR); the Research Centers in Minority Institutions (RCMI) Program, and the Puerto Rico Clinical and Translational Research Consortium (PRCTRC).

Dr. Torres-Ruiz has served a member of various national groups including; the National Board of Medical Examiners (NBME) Item Development for the USLME Part I (Biochemistry and Cell Biology).

In 2012, Dr. Torres-Ruiz was selected as the Chair of the Scientific Committee for the 13th RCMI International Symposium on Health Disparities titled "Translating Science to Better Health: The Power of Diversity and Multicultural Engagement". This scientific activity was held December 10-13, 2012 in San Juan, Puerto Rico. This International Symposium was designed to share information in areas related to cardiovascular disease, diabetes and obesity, cancer, women`s health, mental health, infectious disease, stroke, behavioral and social health and their relationship to improving minority health and health disparities.

Margot Gage Witvliet, Ph.D.

Assistant Professor, Sociology, Lamar University

The impact of virtual learning on health literacy: lessons from a virtual townhall held by the Lamar University Recovery and Resilience Academy

Dr. Margot Gage is a social epidemiologist and assistant professor at Lamar University. She earned her Ph.D. in social epidemiology and public health from the University of Amsterdam/Amsterdam Medical Center from the Department of Public Health. During her Ph.D., she visited UCLA to carry out research. Before coming to Lamar University, Dr. Gage completed two post-doctoral fellowships at the Norwegian University of Science and Technology in the Department of Sociology, where she also served as principal investigator.

During her Norwegian postdoctoral period, she completed a research visit to Harvard University. Dr. Gage has written over 17 peer-reviewed journal publications and has over 100 citations. Reuters News quoted her for her co-authored research on lone motherhood. Her co-authored publication on corruption and health is cited by the United Nations. She has won a number of awards and has been invited to present her research at international conferences. Dr. Gage speaks Dutch fluently. She is a veteran advocate and is building Texas's first Women Veteran and Women First Responder Park. She teaches courses in research methods, epidemiology and global health, global health disparity, marijuana and medicine and introduction to sociology.

INVITED TRAINEE SPEAKERS

Cristina Bañuelos, Ph.D.

Research Scientist, National Institute on Aging

Basal Forebrain Neuronal Systems in Normal Cognitive Aging

NEED BIO

Francisco J. Barrera Flores, M.D.

Postdoctoral Researcher, Department of Psychiatry, Harvard School of Public Health

Weight Changes in Major Depressive Disorder: A Systematic Review and Meta-analysis of Prospective Studies

Francisco J. Barrera Flores, MD, MSc., was born and raised in Monterrey, Mexico. He studied medicine at Universidad Autonoma de Nuevo Leon. Afterwards, he received a Master of Science Degree in Epidemiology at the Harvard's T.H. Chan School of Public Health. Currently, he is a post-doctoral researcher at the Harvard School of Public Health in the Department of Epidemiology and at the Massachusetts General Hospital in the Department of Psychiatry. He is interested in applying epidemiological and statistical methods to analyze race/ethnic disparities in the prognosis of patients, particularly in psychiatric disorders.
He wants to train in medical psychiatry and he looks forward to apply epidemiological methods to psychiatric diseases in order to better understand the characteristics and prognosis of patients with these diseases.

Ilya Blokhin, M.D., Ph.D.

Resident, University of Miami, Miller School of Medicine

Impairment of Splicing of Non-coding RNAs in the Brain of Patients with Alcohol Use Disorder

NEED BIO

Monique T. Cano, Ph.D.

University of California, San Francisco

Factors associated with smoking in low-income persons with and without chronic illness

NEED BETTER PIC

Monique T. Cano received her PhD in clinical psychology from Palo Alto University in 2020. She is now a research postdoctoral fellow in the Department of Psychiatry and Weil Institute for Neurosciences working with Dr. David Pennington and Dr. Steven Batki at the San Francisco VA Health Care System (SFVAHCS). Monique's primary research interests include adapting and implementing culturally appropriate health-related interventions for underserved populations who suffer from co-occuring disorders. Her work at the SFVAHCS is focused on testing and implementing health-related interventions utilizing technological platforms that are culturally appropriate to address the needs of patients with co-occuring disorders.

Manuel A. Gardea Resendez, M.D.

Department of Psychiatry & Psychology, Mayo Clinic- Rochester

Illness trajectory from prodromal symptoms to incident bipolar disorder and schizophrenia

NEED BIO

David Martinez-Garza, M.D.

Psychiatry Fellow, Massachusetts General Hospital, Department of Psychiatry-Harvard Medical School

Neglected Among the Neglected: Nicotine Use Disorder Among Latinos

NEED BETTER PICTURE AND BIO

Brandi Quintanilla, DO, MS

PGY2 Resident- Psychiatry & Behavioral Science, UT Health Houston McGovern Medical School

Presentation Title: *Kappa Opioid Receptor Plasma Levels are Associated with Sex and Diagnosis of Major Depressive Disorder but not Response to Ketamine*

Brandi received her medical training at the West Virginia School of Osteopathic Medicine. She conducted a Post-Doctoral Fellowship at the Experimental Therapeutics and Pathophysiology Branch of the National Institute of Mental Health (NIMH). Her post-doctoral studies at NIMH have been aimed at identifying mechanisms by which rapid-acting psychoactive antidepressants (RAPAs) exert therapeutic effects in treatment-resistant depression (TRD). Brandi's career goal is to identify predictive and diagnostic biomarkers for TRD in ethnic minority groups, to enhance development of efficacious rapid-acting interventions for TRD for these groups.

Orrin Ware, Ph.D., MPH, MSW

Assistant Professor, School of Social Work, University of North Caroline at Chapel Hill

Presentation Title: *Higher stress during admission predicts shorter treatment retention in residential treatment*

Orrin D. Ware, Ph.D., MPH, MSW, is an assistant professor at the University of North Carolina at Chapel Hill School of Social Work. After receiving his Ph.D. from the University of Maryland School of Social Work, he completed a National Institute on Drug Abuse (NIDA) T32 postdoctoral fellowship at the Johns Hopkins University School of Medicine Behavioral Pharmacology Research Unit.

Dr. Ware's research examines adult substance use disorder treatment, especially among those with co-occurring mental health disorders. He is interested in the whole gambit of substance use disorder treatment, from reducing barriers to treatment entry to improving outcomes for individuals after they are discharged from treatment. To answer his research questions, Dr. Ware uses large publicly available datasets, electronic medical records, and data captured by primary data collection. Dr. Ware uses his interdisciplinary background as an applied public health researcher and licensed clinical social worker to inform his research agenda.

Dr. Ware's work has been published in several interdisciplinary journals, including Community Mental Health Journal, Journal of Pain and Symptom Management, Journal of Social Work, Journal of Substance Abuse Treatment, and Journal of the American Medical Association. Dr. Ware is currently an Early Career reviewer for the Journal of the Society for Social Work.

INVITED COMMUNITY PANELISTS

Dr. Christian Corrales

Assistant Vice President,
Community Engagement, UTRGV

Dr. Linda Nelson

Assistant Professor, Senior Director of
Clinical Operations- UTRGV SOM

John Ronnau, MD

Sr. Associate Dean, Community Health
Partnerships, UTRGV SOM

Luis Torres- Hostos, Ph.D.

Founding Dean, UTRGV School of
Social Work

ORAL PRESENTATION ABSTRACTS

Graduate Student Category

A neurodevelopmental perspective to improve innovation in preventive treatment of substance use disorders

Ismael Perez1, MSc., John L. Vandeberg, PhD2, and Mario Gil1, 3, PhD 1Department of Psychological Science, The University of Texas Rio Grande Valley 2 School of Medicine South Texas Diabetes and Obesity Institute and Department of Human Genetics 3Department of Neuroscience and Institute for Neuroscience, School of Medicine, The University of Texas Rio Grande Valley

Background:
Midbrain dopaminergic neurons have been associated with substance use disorders (Blaess & Ang, 2015). Understanding their neurodevelopment during early stages of life is fundamental for innovating preventive care treatments. The animal model Monodelphis domestica has been proposed as an excellent candidate to study neurodevelopmental changes due to the ease of access to see changes in their embryonic development (Mate et al., 1994). The purpose of our study is to inform how brain cells, including and especially dopaminergic neurons, mature by quantifying their number during early development. Additionally, the study aims to compare different midbrain areas and track neurodevelopmental changes across early development.
Methods:
Monodelphis brains were collected at different developmental times points, brains were sliced, and brain sections processed following standard immunohistochemistry and other staining protocols to visualize different protein markers. ImageJ and Zen software were used to conduct area analysis and neuronal quantification. A modified stereological approach developed by our lab was utilized for precise neuronal quantification. A descriptive analysis was utilized to compare anatomical and neuronal numerical differences across different developmental stages. Inter-rater reliability was utilized to reduce bias during the neuronal quantification process.
Results:
A preliminary analysis from a previous study (Perez et al., 2021) revealed anatomical differences in area and volume across three different stages, embryonic day 14 (area= 27260.36 µm, m= 381.376, V=81781.0735 um^3), postnatal day 1 (49917.28 µm, m= 404.12, V= 149751.827 µm^3), and postnatal day 6 (81866.66 µm, m=166.016, V= 245599.9853 µm^3). Neuronal and area differences from the stages of postnatal day 21, 30, 8 weeks and 23 weeks will be included once inter-rater reliability is established.

Cell-based screening of antistress activity of some phytochemicals: Identification, validation, and relevance to old-age related pathologies

*Zhang H1 , Kaul SC2 and Wadhwa R2 **
1Graduate School of Science and technology, University of Tsukuba, Ibaraki 305-8575, Japan 2AIST-INDIA DAILAB, National Institute of Advanced Industrial Science & Technology (AIST), Tsukuba - 305 8565, Japan

Background- A variety of environmental stresses have been shown to contribute to poor quality of life, tissue dysfunctions and ailments including metabolic disorders, cognitive impairment, and accelerated aging. Oxidative stress (an imbalance between the production and processing of highly reactive oxygen species) is largely associated with these phenotypes. Whereas drug development and disease therapeutics have advanced remarkably in last three decades, there are still limited options for stress management. Since the later can effectively decrease the disease burden, we aimed to screen phytochemicals with anti-oxidative stress activity using cellbased assays.
Methods- Brain-derived cells were subjected to chemical models of oxidative (paraquat), metal (cadmium nitrate) or hypoxia (cobalt chloride) stresses. Stressed cells were allowed to recover either in the control or phytochemical supplemented culture medium. Cell survival and protein expression/signaling were analyzed to select the useful compounds and/or plant extracts.
Results- Cells subjected to paraquat stress showed decrease in their viability. Three rounds of blind screening of the 24 phytochemicals resulted in identification of 5 compounds that caused better recovery of cells. The selected compounds were examined for their ability for protection against metal and hypoxia stresses induced by cadmium nitrate and cobalt chloride, respectively. Based on these 3D-anti stress protection ability, Withanone (Wi-N) and triethylene glycol (TEG) were selected for molecular validation. We found that whereas stress caused increase in (i) apoptosis (ii) ROS accumulation coupled with mitochondrial depolarization (iii) DNA doublestrand break (iiii) protein aggregation, the selected compounds and the Ashwagandha extracts (known to possess these compounds) caused remarkable protection. Furthermore, both Wi-N and TEG caused

differentiation of C6 glioblastoma and IMR-32 neuroblastoma as evidenced by the respective differentiated cell morphology and increased expression of biomarkers.
Conclusion- The results suggested that Wi-N, TEG, their mixture, and the natural resource (Ashwagandha) possess potent antistress activity that may be useful for management of old-agerelated ailments.

Computational studies of Novel Thiazolidine-4-one based MAO inhibitors as neuro-protective anti-Parkinson agents
Abhimannu Shome, Pooja A Chawla
Department of Pharmaceutical Chemistry, ISF College of Pharmacy, Moga

Now a day's Neurodegenerative diseases such as Parkinson disease is a big concern in the field of medical sciences. In Parkinson's disease causes neurodegeneration in several way. Monoamine oxidase enzyme is one of them. MAO oxidize the dopamine into its precursor 3,4-dihydroxyphenylacetic acid (DOPAC), which leads to increased ROS and decreased dopamine level. Thiazolidine-4-one used to design the desired compound for the target. Thiazolidine-4-one derivatives have been reported to possess anti-oxidant property so the Thiazolidine-4-one clubbed compounds was designed and studied via Molecular docking via AutoDock vina, drug-likeness profile by swissADME and pharmacophore modelling through Pharmagist webserver. From the Library of 10 compounds PS-5 shows a very promising docking score of -12.1kcal/mol for MAO-B enzyme and for MAO-A it is about -10.0 kcal/mol this clarifies the bulkiness and electro-negativity of the Florine group if favorable for the best supramolecular interaction. Further the drug-likeness study shows a positive impression on the compound profile as there is no violations of Lipinski rule. Four MAO inhibitors such as Selegiline, Rasagiline, Safinamide and Isocarboxazid were used as standard for this experiment. Pharmacophore features of the ligands, those features are important for optimal interactions between macromolecule and ligand this process was done via alignment-based method of pharmacophore modelling. Total of 11 features were identified lie three aromatics, one hydrophobic, two hydrogen bond donor and five hydrogen bond acceptors, further those features are mapped on three-dimensional space to find out the steric and electrostatic properties of compounds that are important for interaction.

Development and validation by RP-HPLC method for the estimation of piperine and coenzyme Q10 in bulk and pharmaceutical dosage form
Nikita Sharma, Mrinmoy Sarkar, Pooja A Chawla
Department of Pharmaceutical Analysis, ISF College of Pharmacy, Moga, Punjab, India

Safety is the fundamental principle in the provision of pharmaceutical products for health care of human being. Nutritional supplements used in medical practice are gaining considerable momentum in the world during the past decades. But this supplement is needed to be analysed before releasing in market to avoid any complications. A combination of piperine and coenzyme Q10 is used as nutritional supplement. As no analytical method has been developed for their simultaneous estimation a simple, specific, sensitive, precise and accurate RP-HPLC method was developed for the determination of CoQ10 and piperine in bulk or pharmaceutical dosage form. Coenzyme is very popular for its antioxidant property for protecting LDL from oxidation and piperine maintains cardiovascular system and increases bioavailability of coenzyme Q10. In this developed method, Waters X Bridge C8 column (250mm x 4.6mm,5µm) was used as a stationary phase and acetonitrile, tetrahydrofuran(THF), and water used in 65:32:3 (v/v) ratio as mobile phase with 1 ml/min flowrate with PDA detector detection at 275nm. The RP-HPLC was developed according to ICH guideline parameters. The retention times of Coenzyme Q10 and Piperine were 4.56 and 8.19 min respectively. The linearity ranges have lied between 4-6µg/ml, 240-360µg/ml. Correlation coefficient for both is 0.997. The present successfully validated method was applicable for the assay of piperine and coenzyme Q10 in bulk and pharmaceutical dosage forms.

Eating patterns of patients with Type 2 Diabetes Mellitus and their household first degree relatives. A cross sectional study from CEDIAMET.
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During the first quarter of 2022, the hospital admissions in Mexico registered 6,575 patients with Type 2 Diabetes Mellitus (T2D), more than 61% had not received nutritional care, and in addition, 55% of the cases suffered from hypertension blood pressure and more than 14% had obesity. Clinical complications associated to a poor control of T2D were visual disability, and motor disability. It has been recognized the appearance and development of diabetes and its complications have genetic components.

However, this genetic factor interacts by the presence of other environmental risk factors, such as eating habits and sedentary lifestyle. Household members can share eating patterns, but can differ from patients diagnosed with T2D due to learning from health personnel on healthy habits. Therefore, it is expected differences in eating habits compared with direct relative. Sabotage from relatives has been described when families stress patients on maintain inadequate eating patterns. In this study, we will record food preferences patterns (frequency and quantity of food consumption) from patients with T2D attending CEDIAMET clinic, and patters obtained from their first degree relatives (Parents, Brothers, or Children) with no T2D diagnosis. In the same way, weight, height, Body Mass Index (BMI), fat percentage, waist, hip, and neck circumferences will be contrasted. Eating patterns and frequency of consumption were evaluated through a validated questionnaire from the Study on the Urban Border for Diseases and Factors Associated with Obesity (ESFUERSO). Currently, no studies have been carried out that describe the eating patterns of a patient diagnosed with DM2, compared with the eating patterns of their direct relatives without a diagnosis. When comparing these eating patterns, the patient diagnosed with DM2 is expected to have better-eating patterns, compared to their relatives who do not have a diagnosis of DM2.

Familial chylomicronemia syndrome: A family case report in U.S./Mexico border by CEDIAMET.

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Primary familiar hyperchylomicronemia syndrome (FHS) is an extremely rare autosomal recessive condition. In 80% of cases is a result of a mutation in lipoprotein lipase, meanwhile, the 20% is a malfunctioning enzyme due to APOC2, APOA5, LMF1, or GP1HBP1. It is estimated FHS affects 3000 to 5000 individuals globally, with no correlation by sex or race. We are presenting a family with FHS in Reynosa, Mexico. The index patient was a male 36 years old who attended the CEDIAMET clinic after his 6th episode of acute pancreatitis. He has triglycerides 1300 mg/dl and CT scan with Balthazar C score. He suffered other five episodes of acute pancreatitis since 20 years old with serum triglycerides between 1,000 and 3,000 mg/dL. Each episode progressed in pain intensity and Balthazar score from A to C. The patient received treatment with bezafibrate and captopril because of hypertension. The physical exam shows eruptive xanthomas on his back, otherwise no other clinical relevant findings. He has a family history of recurrent pancreatitis in his father, and two older sisters (from a total of 3 sisters). This is the first case of FHS presented in RGV. To our knowledge, only one mutation in lipoprotein lipase had been described in Guanajuato, Mexico (Colima-Fausto 2017). The p.Gly188Glu mutation affects the lipid-binding region, leading to a complete loss of LPL function. We will research this case to determine if they have a mutation on any of the known genes and if negative, to sequence the regions for seeking new mutation on the U.S.-Mexico border. The common treatment for lowering triglycerides works small or not at all. Other conditions like hypothyroidism or Cushing were ruled out. A specialized exam is the post-heparin activation of lipoprotein lipase inadequate release of the enzyme. The dietary treatment includes a very low-fat diet (no more than 20 to 30 g fat/day), and avoiding alcohol. Plasmapheresis is an option for avoiding acute pancreatitis treatment. Recently, tiparvovec was discontinued in Europe (2007), and was the first gene therapy approved. Volanesorsen is another option that reduces triglycerides by 50 to 80%, currently in phase II and III trials.

Identification of Tectorigenin as a natural pro-hypoxia compound: implications in modulation of cellular differentiation and senescence

Mallika Khurana

Background: Hypoxia, a suboptimal level of oxygen, evokes stress response in cells and activated hypoxia signaling has been largely established as a pro-metastasis and pro-angiogenic factor for tumor cells. On the other hand, age-related neurodegenerative disorders are characterized by hypoxic environment, accumulation of molecular garbage and induction of premature senescence. Several recent studies have reported anti-stress impact of the intermittent induction of hypoxia signaling in these cells.
Methods: Screening of a phytochemical library using Hypoxia Responsive Element (HRE) driven luciferase as a reporter was carried out to identify hypoxia-modulating phytochemicals. Activation of HIF-1a (master regulator of hypoxia signaling) was validated by Western Blotting and immunostaining using specific antibodies. Short-term and long-term effect of the selected compounds on cell viability were determined by cell viability and colony forming assays, respectively. Furthermore, *in vitro* wound-scratch assays, protein aggregation models, and replicative senescence models were recruited to determine the effect of the selected compound on these phenotypes.

Results: Tectorigenin (TEC) (iso-flavone obtained from leopard lily or *Iris domestica*) was selected as a pro-hypoxia factor. TEC treated cells showed significant activation HRE-driven luciferase reporter and upregulation of endogenous HIF-1a. On these lines, it was found that TEC resulted in de-aggregation of induced aggregation of protein reporters. cDNA microarray data revealed that TEC modulated the expression of genes involved in cell migration and differentiation. We used cellular senescence and astrocytic differentiation models and found lifespan extension of normal human fibroblasts and differentiation of rat-glioma cells, respectively. **Conclusions:** TEC could be defined as an anti-stress and anti-aging phytochemical that could be useful to manage hypoxia-driven ailments, involving protein aggregation and neurodegeneration. Further studies are warranted to support these claims and to dissect their molecular mechanism(s) of action.

Synthesis, Biological Evaluation and Docking studies of Substituted 4-Thiazolidinone Derivatives as Antioxidant, Anti-inflammatory and Anticancer agents

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Heterocyclic scaffolds are playing the important role in drug discovery and development. Currently many heterocyclic scaffolds like thiazole, thiazolidinone or thiazolidinedione have proved to be vital or provide life support against cancer and inflammation. The present work reports the ten 4-thiazolidinone derivatives synthesized via conventional route using three subsequent steps. The structural identification of the compounds was determined through spectrophotometric analysis. Further, the synthesized compounds were subjected to antioxidant, anti-inflammatory, and anticancer activities. All the synthesized derivatives possessed good to moderate antioxidant effects with maximum scavenging exhibited by FP7 and FP10. Thein vivo anti-inflammatory activity was performed by the carrageenan-induced rat paw edema method and the compounds FP4 and FP7 possessed maximum inhibition. The synthesized analogs were subjected to in vitro antitumor activity over MOLT-4, EAC cell lines and it was found that compounds FP4, FP7, and FP10 emerged out as the most potent analogs against the tested cell lines. Molecular docking studies were carried out using Auto Dock 4.2.6 software. Structure-activity relationship gave a clear picture of title compounds such as electron-donating (OH, OCH3) groups at arylidene ring at position-5 increase antioxidant activity and is decreased by the presence of an electron-withdrawing group at the same position. Chloro substituted phenyl imino group at second position enhanced the anti-inflammatory activity while substituting electron-donating groups on arylidene moiety attached with fifth position of 4-thiazolidinone improved the anticancer activity.

Validated RP-HPLC method for simultaneous estimation of Ofloxacin and Racecadotril in bulk and combined pharmaceutical formulations

Debashree Debasish Das

Combined drug dosage forms are highly used since they can target more than one disease. For Ofloxacin and Racecadotril in bulk and combined dosage form a simple ,accurate and precise stability indicating simultaneous method was developed and validated by **RP-HPLC** (in isocratic system) as per ICH Q_2 R_1 and FDA guidelines. This method was carried out by waters X bridge stainless steel C_{18} Column (250mm X4.6mm,5 micro meter) packed with ODS as stationary phase and methanol : acetonitrile :water (40:40:20) as mobile phase. As the pKa of both OFL and RAC are strong acidic mobile phase pH should be maintained below 6.0 so the pH of the mobile phase was adjusted to 2.7 by orthophosphoric acid. As the system was flow sensitive the flow rate was set at 0.8 $mlmin^{-1}$ at room temperature and UV visible spectrometer was used as detector (at 210nm). As the validation carried out the method showed good linearity and correlation co-efficent of ofloxacin and racecadotril , with good mean recovery value. For the determination of both the drugs in bulk and pharmaceutical formulations this validated method could be used perfectly. Further to ensure the specificity and stability the stress studies were performed.

Medical Student Category

A Case of a Reversible Cause of Psychosis: Thyroid Storm

Richard Wagner, Nina Shyama Appareddy, Nancy Vergara, Nayeli Zarate, Khalid Sheikh, Laura Garcia

Thyroid storm, an exaggerated manifestation of thyrotoxicosis, is a rare and life-threatening endocrine emergency. Physical and emotional stressors can precipitate thyroid storm in patients with underlying thyrotoxic conditions. Patients present with cardiac, GI and CNS dysfunction. The Burch-Wartofsky point scale predicts the likelihood of thyroid storm based upon the presence of these CNS, GI, and cardiovascular symptoms along with thermoregulatory dysfunction. A score of 45 or greater on this scale is indicative of thyroid storm. Treatment of thyroid storm includes a beta blocker, a thionamide, iodine solution, a glucocorticoid, and a bile acid sequestrant. Thyroid storm is a recognized cause of secondary psychosis. Though psychosis due to thyrotoxicosis was first reported in the literature in 1840, few cases have been reported since that time. The most common symptoms of psychosis in these patients include mania, paranoia, hallucinations, and delusions. Abnormal vital signs such as tachycardia, hypertension, and an irregular pulse can help distinguish secondary from primary psychosis. If thyrotoxicosis is a suspected cause of psychosis, then TSH, thyroxine, and thyroid antibodies should be measured. Treatment of the underlying thyrotoxicosis is curative. We present the case of a 28-year-old female with a several psychosocial stressors that presented to the emergency department with symptoms of a manic episode. Work-up included CBC, CMP, CSF studies, HIV panel, urinalysis, UDS, salicylate levels, urine drug screen, K2, Spice, LSD, lead level, Head CT, and Brain MRI. All tests were negative or within normal limits. The patient was initially started on benzodiazepines and then switched to an antipsychotic. After discontinuation of benzodiazepines, the patient's heart rate increased from 110-150s with sinus tachycardia. TSH was

An NGQD Based Diagnostic Tool for Pancreatic Cancer

Ryan Ajgaonkar

Background: Pancreatic cancer remains difficult to detect at early stages which contributes to a poor five-year survival rate. Therefore, early detection approaches based on novel technologies should be explored to address this critical health issue. Nanomaterials have recently emerged as frontrunners for diagnostic applications due to their small size in the 1-100 nm range, which facilitates one-on-one interactions with a variety of biomolecules like oligonucleotides and makes them suitable for a plethora of detection and delivery applications. In this work, the presence of specific pancreatic cancer miRNA (pre-miR-132) is detected utilizing the fluorescence properties of highly biocompatible nitrogen-doped graphene quantum dots (NGQDs).
Methods: NGQDs were synthesized from Glucosamine HCl and deionized H2O. Cuvettes were filled with a mixture of bait ssDNA (13.7µM) and NGQDs (0.5 mg/ml) in deionized H2O that was vortexed for 5s before adding target strands. Samples were again vortexed for 5s and incubated at 4 ºC for 2hrs before excitation at 400 nm with an emission wavelength measured from 420 nm to 780 nm using a spectrofluorometer. Data analysis was performed using Origin software.
Results: From the Zeta potential measurements, this platform is comprised of positively charged (1.14±0.36 mV) NGQDs binding with negatively charged (-22.4±6.00 mV) ssDNA electrostatically and/or via $\pi - \pi$ stacking to form an NGQDs/ssDNA complex with an estimated size of 20 nm verified with TEM. Observing variations in fluorescence spectra of NGQDs/ssDNA complexes allows for the distinguishing of single-stranded and double-stranded DNA, as well as specific single-stranded DNA sequences due to bait-target complementarity. Furthermore, this enables detection of the loop of pre-miRNA of interest and can identify target miRNA from random controls with sensitivity in the nanomolar range.
Conclusions: This approach allows for pancreatic cancer-specific miRNA sensing to facilitate pancreatic cancer detection at the early stages. Such early diagnosis is ultimately aimed to increase cancer patient survival rates.

Cardiac Tamponade: Innovative Sternotomy Simulation Model for Training Pediatric Cardiac Intensive Care Team

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Introduction: Cardiac tamponade occurring after cardiac surgery is rare but life threatening and requires simultaneous resuscitation and emergent sternotomy by the intensive care team. A simulated scenario using innovative mannequin with sternotomy wound has the capability of reproducing cardiac arrest associated with postoperative tamponade. We evaluated the face validity of this innovative mannequin, the confidence level and crisis resource management skills of the team during sternotomy to manage postoperative cardiac tamponade.
Methods: The simulation case scenario was developed using innovative sternotomy mannequin for children's hospital cardiac intensive care unit(CICU) teams. The case involved a 3-year old male, intubated, mechanically ventilated after surgical repair of CHD, progressing to cardiac arrest due to cardiac tamponade. We conducted a structured, video debriefing following each scenario. We conducted a formative learner assessment before and after each scenario and analyzed the data using student t-test.
Results: Of the 72 CICU providers, a statistically significant proportion of providers ($p < 0.0001$) showed improved confidence in assessing and managing cardiac arrest occurring following postoperative cardiac tamponade. All the providers scored ≥ 3 for impact of the scenario on practice, teamwork, communication, assessment skills, improvement in CPR and opening the chest and their confidence in attending similar clinical situation in future. Most (96–100%) scored ≥ 3 for perception on realism of mannequin, the scenario, re-opening the sternotomy and level of stress.
Conclusions: Innovative adaptation of a high-fidelity mannequin for cardiac tamponade simulation can achieve a realistic and reproducible training model with a positive impact on multi-disciplinary team training.

Further Decoding the Molecular Relationship Between Pancreatic Ductal Adenocarcinoma and Diabetes Mellitus
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Background: Pancreatic ductal adenocarcinoma (PDAC) is a devastating malignancy, especially as there are no current reliable methods of screening. A significant relationship between PDAC and Diabetes Mellitus (DM), specifically anew onset of diabetes mellitus (NOD). The molecular network of PDAC and new onset DM is not completely understood. We sought to investigate the molecular network of these two diseases with the ultimate goal of identifying potential biomarkers to aid in the screening of PDAC.
Methods: We conducted a review for relevant articles concerning the molecular relationship between PDAC and DM. We compiled a list of 74 genes which have been implicated in the relationship between PDAC and DM. These genes were used for the construction of gene interaction network (GIN) by using Gene MANIA on the bases of genetic interactions, co-expression, co-localization, pathway, physical interactions, predicted interaction and shared protein domains. The GIN input file was imported in the cytoscape for the pathways enrichment analyses by using KEGG plugin. The cytoscape was used for the construction of the final GIN of both normal and cancer genes separately.
Results: GIN and pathways enrichment analyses of genes known to be altered during NOD/DM and PDAC indicate their association with different pathways. in this study we have mentioned around 20 enriched pathways in the associated tables and figures which promptly show the direct and indirect association with pancreatic cancer. The major signaling pathways that were observed to be upregulated include NABA Matrisome, protein phosphorylation, metabolic processes and proteins upregulated a s a result of hormone response. Out of all pathways, proteins that are more involved in metabolic processes were found most influenced.
Conclusion: In conclusion, we have contributed to identifying the molecular network relating PDAC and DM. Our future aim is to investigate the genes associated in this pathway. We will use this data to design a panel for next generation sequencing in tissue samples of patients diagnosed with PDAC.

Morgellons Disease - The real-life Manifestation of a mysterious and rare disease; that is more than just the 'mind-body' interaction- A case Report
YAYA BESONG

Author: Yaya L Besong, Final Year Medical Student (Saint James School of Medicine).
Background: A case of a patient who was been diagnosed with Morgellons disease, a rare disease, and an interesting case because of the uniqueness of its presentation. The analysis of this case is important because it will help to point out some of the characteristics that can be used to identify this disease. My patient in this paper did demonstrate in front of the doctor and myself, foreign material extruding from her skin and inside her mouth. The patient has also suffered severe distress with nonhealing skin ulcerations and excruciating pain. The paper will examine existing literature on Morgellons disease to understand its nature. The paper is important because Morgellons is often dismissed, overlooked, or just considered to be a psychiatric disorder. It is important to demonstrate the etiology of this disorder to prove that it is more than just a "mind-body" interaction.

Case presentation: 60-year-old female, presents with multiple skin lesions; described as painful, itching, bleeding, and changing in texture. Onset of the lesions started 6 years before her initial visit. Patient had no malaise, fever, or weight loss; but mentions having multiple foreign material extruding from her skin. She has good tolerance to current treatment and fair response for the symptoms. Patient is willing to participate in the research, has demonstrated interest in sharing her pictures, medical reports, surgical report (especially as she is planning to have eye surgery soon, due to eye muscle weakness and drooping, that started around the time of her diagnosis, now affecting her vision).
Conclusion: This report will discuss current literature that exists regarding Morgellons disease, which is so rare that the Centers for Disease Control and Prevention (CDC) reports only about 3.65 cases in 100,000 of the population. Patient agrees to be followed and discuss all treatments received thus far. Case report demonstrates that, there is a physical pathogenesis to Morgellons disease and a treatment of the infectious causes of the skin condition.
Keywords: Morgellons, rare, mind-body, excruciating, nonhealing, extruding, research, overlooked, disease.

STROKE MIMICS: A CHALLENGE FOR THE CLINICIAN- CHECK ORIGINAL ABSTRACT
Rodolfo Singleterry, Khairiya Haj-Yahya, Dayan Ojeda-Damas, Carlos Ramos, Laura Garcia

A stroke is defined as an acute neurologic injury that is the result of a disruption in cerebral perfusion due to the blockage or rupture of an artery. Ischemic infarcts represent up to 87% of all strokes, and most commonly present with sudden onset, focal neurologic deficits that are consistent with a vascular etiology. Approximately 30% of patients presenting to the Emergency Department with stroke-like symptoms are unfortunately stroke mimics.
Stroke mimics such as syncope, sepsis, seizure, and migraines can present with stroke-like symptoms and are often indistinguishable from true strokes. The study conducted will serve to provide medical residents and medical students with a clearer understanding of such stroke mimics in the hospital setting.

UTRGV Student Run Clinic: The Past, The Present, and The Future
Jessica Flores

Purpose: The UTRGV SOM Student Run Clinic (SRC) is a student- led organization that provides free primary care and promotes health equity in the Rio Grande Valley. Through the SRC, barriers of access to healthcare and health promotion are targeted, especially by emphasizing health literacy and patient advocacy. The SRC benefits not only our patients but medical students who work in the clinic, learning about the unique needs and culture of the underserved community while gaining clinical experience.
Description: The SRC brings teams of volunteer medical students and physicians to Peñitas, TX to provide free primary healthcare to vulnerable populations, including uninsured, undocumented, and lowincome people. Since its start, SRC has grown through success and obstacles, such as structuring all our volunteer teams to include at least one Spanish speaker to provide care in the patients preferred language and establishing culturally competent relationships with the Peñitas community.
Partners: The SRC relies on our partnerships: the Peñitas community, medical student and physician volunteers, and the Proyecto Desarrollo Humano (PDH). PDH is a non-profit organization in Peñitas that allows us use of their clinic space as well as gives our patients continuity of care between our operations in their own clinic. The community of Peñitas is a source of our patients but also of clinic staff and promotoras that connect the patients to external resources. Medical student volunteers work in teams to conduct patient interviews and present to physician volunteers, who teach students and see patients. The SRC board of medical students manages and executes the clinic operations.
Looking Ahead: The SRC is an important part of decreasing disparities in the colonia we serve. We will perform a literature review of SRC publications, review and realign our board member roles, and perform an analysis of our Strengths, Weaknesses, Opportunities and Threats (SWOT) with stakeholders to strategize for our future.

Medical Resident Category

A Very di-Still-ed Diagnosis- Adult-Onset Still's Disease Presenting in a Middle-Aged Hispanic Patient

Christine Loftis, Shadi Jafari-Esfahani , Juan Naranjo, Andrew Guerra, Emilia Dulgheru

Background: Adult-Onset Still's Disease (AOSD) is a systemic inflammatory disorder characterized by daily high fevers, arthritis, evanescent rash, and leukocytosis (1). Patients can present without typical manifestations and pose a challenging differential. We present a case of a 52-year-old gentleman with a one-year history of recurring fever, lymphadenopathy, and weight loss diagnosed with AOSD. This case highlights the diagnostic challenge that AOSD poses and the strategies to help aid in the diagnosis.
Case Presentation: A 52-year-old gentleman presented to the ED for a 2-week history of fever associated with chills and bone pain. He reported that he has been having intermittent fever, weight loss, night sweats, and rash for the past year with prior workup being unrevealing. He endorsed swollen glands and fatigue but denied productive cough, chest pain, gastrointestinal, urinary, or neurological symptoms. On physical examination, the patient was febrile at 101.9 deg F, tachycardic 121 BPM, and RR 21 br/min. He appeared cachexic, with dry oral mucosa, palpable lymphadenopathy, and bilateral knee tenderness. Laboratories were remarkable for WBC 22.3 th/mm3, hemoglobin 11.1 gm/dL, platelet 513 th/mm3, sedimentation rate 120 mm/h, CRP 23 mg/dL, lactic acid 0.89 mmol/L, ferritin level 28,595.9 ng/mL, and LDH 603 IU/L. Peripheral smear revealed reactive neutrophilic leukocytosis. Infectious etiology, including SARS Covid-19PCR, HIV, blood cultures, lumbar puncture with CSF analysis, and QuantiFERON gold were negative. Autoimmune workup was unrevealing. CT Chest/Abdomen demonstrated moderate pleural effusions and reactive bilateral hilar, mediastinal, and retroperitoneal lymphadenopathy, and hepatomegaly. CT-guided biopsy of the left inguinal lymph node showed benign follicles with mixed B and T cells. Flow cytometry showed increased granulocytes and eosinophils without immunophenotypic abnormalities to suggest hematologic malignancy. After excluding infectious and malignant causes, rheumatology was consulted. Based on symptomatology, laboratory, and radiographic findings, a diagnosis of AOSD was entertained. Yamaguchi's criteria supported the diagnosis with four major and four minor criteria met (2). The patient was started on prednisone 1 mg/kg with excellent response.
Conclusion: AOSD is a diagnosis of exclusion, and the appropriate clinical scenario should warrant further investigation. AOSD should be in the differential after careful workup
and excluding infectious etiology, malignancy, and other connective tissue diseases.

Disseminated infection with Bartonella henselae in a drug-induced immunosuppressed adult causing fever, thrombocytopenia, and encephalitis

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Cat scratch disease (CSD) is caused by the bacterium Bartonella henselae, typically characterized by self-limiting regional lymphadenopathy. CSD is more prevalent in immunocompromised individuals. However, serious illness is infrequent. This case report demonstrates uncommon symptoms of disseminated Bartonella henselae infection manifesting as encephalopathy, thrombocytopenia, and septic shock. A 62-year-old malnourished, Hispanic man presented with fever and malaise for 1 week which was associated with headache. Past medical history was significant for rheumatoid arthritis treated with prolonged, unmonitored prednisone, chronic obstructive pulmonary disease, and a historyof18 cats at home. On examination, the patient was alert and oriented, febrile, and cachectic, but no regional lymphadenopathy was appreciated. During the hospital course, the patient became more agitated and required intubation. Serological tests showed negative IgM but very high IgG titers of 1:1280 which is indicative of CSD. CSF analysis demonstrates pleocytosis with negative bacterial and fungal culture. The patient was treated with doxycycline for CSD and with voriconazole for concomitant scant growth of Aspergillus flavus on sputum culture. Subsequently, the patient improved with no residual neurological deficits. This case illustrates the importance of investigating Bartonella henselae infection despite the absence of regional lymphadenopathy in an immunosuppressed patient with a history of cat exposure presenting with persistent fever. Neurological symptoms are uncommon but can occur especially with immunosuppression. Moreover, obtaining a history of animal exposure prior to initiating immunosuppressive medications is pertinent.

Increasing opioid overdose among Hispanic young population in the borders of the USA and Mexico. Imperative to work with first responders and proper use of Narcan.

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Background: Hypercapnic respiratory failure is a frequently encountered medical emergency. A very common cause among young patients is a side effect of opioids in the setting of an opioid crisis in both sides of the borders. Sometimes a delay in diagnosis associated with increased synthetic opioids use causes a delay in optimal management. We report a case of a patient that was negative for opioids in urine but responded to repeated dose of Narcan, the family later explained that he was obtaining medications across the border and distributing drugs.2.
Case presentation: 21 y/o Hispanic man who lives at a border town between Mexico and the USA with PMH of drug use was initially found with hypercapnic respiratory distress at home and presented to the ED due to cardiorespiratory arrest via EMS. The patient received a dose of Narcan 0.4 mg on the way to the ED with no response. While at the ED he received CPR and was intubated. Received 6 rounds of epinephrine, 50 meq of sodium bicarbonate x 3, 1 mg bolus atropine x 2, 1 g of calcium gluconate, Narcan 0.4 mg, glucose, he then received a second dose of Narcan 0.4 mg with response and an estimated ROSC of 22 minutes, was later transferred to the ICU. The initial urine drug screen was negative for opioids.3.
Conclusions: As the opioid crisis continues to expand nationwide and in the border towns of Mexico with more available illegal opioids in the streets is imperative to work with first responders to properly apply medications in the setting of suspected overdose. Proper application of Narcan in a case of suspected opioid overdose can be lifesaving.

Postoperative Delirium after Hip Arthroplasty in the Elderly
CHANGHO YI

Purpose: Our study was done to evaluate the influence of postoperative delirium on the prognosis of hip arthroplasty, and risk factors for postoperative delirium in individuals older than 65.
Materials and Methods: Among patients who received hip arthroplasty in our hospital (WCH), we chose 193 patients for our study after excluding patients who had preoperative delirium and who had a history of dementia and cognitive dysfunction. We divided our cohort of 193 patients into two groups, 131 patients with postoperative delirium and 62 patients without delirium. We checked for clinical results for hip arthroplasty. We checked for multiple factors related to delirium.
Results: The mean hospital stay was 42.4±14.0 in the delirium group and 20.4±4.3 in the control group; the difference was significant. The mean preoperative cumulative ambulation score was 1.9±1.2 in the delirium group and 3.1±1.7 in the control group; the difference was significant. In 2 individuals of the control group and 4 of the delirium group, dislocation developed; and there was significant difference. There was a high prevalence of delirium among patients with hip fractures, and of histories of psychiatric diseases, alcohol abuse, liver cirrhosis and cerebral vascular disease. The delirium group had a significantly longer stay in the intensive care unit. On admission, the delirium group had significantly lower sodium and albumin compared to controls.
Conclusion: Because postoperative delirium after hip arthroplasty makes the prognosis worse, preoperative evaluation and management of risk factors is necessary.

Recognizing Fatal Electrocardiography Rhythm Changes in a patient with Severe Hyperkalemia and Prevention of Cardiac Arrest with medical management in small hospitals
Semenawit Burka

Background: Hyperkalemia is one of the most potentially lethal electrolyte disorders. Severe hyperkalemia is defined as a serum potassium level of >6.5 mEq/L. The risk of arrhythmias increases with potassium values >6.5 mEq/L. Small elevation above this value can cause peaked T waves to quickly progress to ventricular fibrillation or asystole. The longer the patient has elevated potassium concentrations, the greater the risk of sudden deterioration. Therefore, recognizing ECG changes and acting quickly to decrease potassium concentration is important to prevent hyperkalemic cardiac arrest.
Case Presentation: A 26-Year-old man with a history of congenital hypoaldosteronism presented to the emergency department with a complaint of palpitations, lightheadedness, bilateral extremity weakness, and generalized muscle aches of 4 hours duration, culminating in collapse. He denied shortness of breath, chest pain, blurring of vision. On examination he was afebrile, tachycardic, and normotensive. Cardiac and respiratory exams were unremarkable, on neurology examination patient was alert and oriented x3, strength 0/5 in 4 extremities. Initial EKG revealed Sinus tachycardia with flattened P waves, wide and bizarre QRS morphology. On laboratory sodium was 119, potassium 9.4, chloride 87, co2 17, creatinine 1.5, and BUN of 33.

The patient was managed with emergent calcium gluconate supplementation, sodium bicarbonate, albuterol via nebulizer, insulin, and glucose. Repeat potassium after 2 hours of presentation was 9.0 mEq/L without EKG changes from baseline. Repeated administration of the above medications resulted in only partial improvement of the serum potassium, with the patient reporting improvement in motor strength, and muscle aches. Emergent hemodialysis was recommended, but delayed due to logistics, with initial medical management avoiding immediate complications. Ultimate hemodialysis resulted in rapid correction of his hyperkalemia several hours after presentation.
Conclusion: Hyperkalemia is a common electrolyte abnormality and is associated with increased mortality. It is important to recognize clinical presentation and abnormal ECG changes of severe hyperkalemia in order to prevent hyperkalemic cardiac arrest by initiating medical management to antagonize the effect of potassium on excitable membranes, rapidly shift potassium into cells, and enhance potassium elimination to preventing hyperkalemic cardiac arrest. This is more useful in small community hospitals where urgent hemodialysis is not easily accessible 24 hours a day.

Without a rash! A diagnostic dilemma for VZV vasculopathy.
Paulina Vega Enriquez

Varicella zoster virus vasculopathy is a condition that can classically present with a dermatomal zoster rash followed by a neurological deficit. The possible neurological manifestations and disease range are extensive.
We present a case of VZV vasculopathy that presents as a pupil-sparing III CNP with evolving multifocal acute ischemic infarcts seen in serial MRI brain imaging that developed in the absence of zoster rash.

Fellow/ Postdoctoral Category

L(D)-tyrosine-mediated one-step chiral graphene production for chirality-dependent sensing
FNU PRANAV

Background: Chirality has been the most iconic phenomenon that occurred in nature. The idea of mirror-image asymmetry associated with the biological entity is still unsolved The emergence of 2D layered nanomaterials which have already shown amazing properties and a wide range of applications, especially in the areas of sensing. Several reports have shown that in many cases based on enantiomers the property of chiral systems gets changed causing different adverse effects and thus it's very important to design chirality-dependent sensing of these enantiomers. Herein, we have developed a novel and facile synthesis method for producing chiral graphene for its application in the chirality-dependent sensing of amino acid enantiomers.
Methods: Initially L(D)-tyrosine was dispersed in milliQ water and then the graphite powder was stirred in the solution. Afterwards, the solution was subjected to bath sonication, followed by centrifugation to prepare colloidal dispersion of exfoliated graphene represented as L(D)-Graphene. For sensing-related studies known concentrations of L(D)-Graphene was deposited on carbon electrode and current-voltage were measured in the presence of different enantiomers of amino acids.
Results: The circular dichroism spectra confirmed the chirality present in the exfoliated L(D)-Graphene. Moreover, the Raman spectrum and transmission electron microscopy images confirmed the formation of multi-layer graphene with asymmetric morphology and a large aspect ratio. Chirality-dependent variation in the cyclic voltammetry curve was found with different enantiomers of amino acids.
Conclusions: The obtained results showed that L(D)-Graphene was stable for up to 1 month. In addition to that L(D)-Graphene exhibits a high aspect ratio and planar morphology and opens a new avenue for chiroptical sensors and devices.

Quality of nutritional care during pregnancy: folic acid and vitamin D supplementation
Isabel Omaña-Guzmán

Backgrounds: Folic acid (FA) and vitamin D supplementation is recommended during pregnancy. Quality nutritional care during pregnancy should include the supplementation of these vitamins. Therefore, the aim of this study was to assess the quality of

nutritional care regarding supplementation during pregnancy in primary health care units in six states of Mexico (Estado de México, Oaxaca, Yucatán, Chihuahua, Veracruz and Chiapas).
Methods: A mixed study was conducted. An indicator (formed by two sub-indicators) to assess the quality of nutritional care focused on FA and vitamin D supplementation in pregnancy was developed and validated. To assess the quality of care, a sample of 97 health units (HUs) was estimated considering the total number of HUs in the selected states. To ensure the representativeness of the following strata: rurality, care for the indigenous population, and size of the HU; at least one unit was assigned to each stratum by simple random sampling. A trained team performed a random sample of 30 pregnancy clinical records in each HU; the records and the nutritional control cards were reviewed to assess whether the recommendations of the indicator were met. The percentage of compliance with the indicator was estimated. It was considered that an evaluated record complied with the indicator if it complied with its two sub-indicators. A traffic light system was used to present the results: good quality was considered as green (compliance 90%); poor quality as yellow (compliance 71% - 89%) and bad quality as red (compliance 70%). In addition, semi-structured interviews were conducted with health professionals and an observation guide was applied in health units.
Results: A total of 95 HU were assessed. Of the 794 cases evaluated, only one met the two sub-indicators. A bad quality of nutritional care focused on supplementation during pregnancy was observed in the six states and in all HUs. It was identified that most HUs did not have a nutritionist and doctors and nurses recognized that they did not have the knowledge to give nutritional recommendations.
Conclusions: It is necessary to implement actions aimed at improving the capacities of health professionals regarding the quality of nutritional care.

Using Cartesian Coordinate Systems to Create, Classify, and Retrieve Biomedical Time-Series: Applications to 24-hour Ambulatory Blood Pressure Monitoring
Antonio Garcia-Hernandez

Background: Ambulatory Blood Pressure Measurement (ABPM) allows physicians to monitor blood pressure variability under everyday living conditions and predicts clinical outcomes better than conventional blood-pressure measurement. ABPM can demonstrate mean arterial pressure (MAP) behavior over 24 hours relevant to clinical practice, such as nocturnal hypertension or increased blood pressure variability. We hypothesized that individuals with the same cardiovascular health status would have the same MAP signal (MAPs) waveform.
Methods: This study reutilizes a data subset from the IDACO Consortium to create 24-hour MAPs. We assigned all the MAPs to data matrix X, performed principal components analysis (PCA) to X, and calculated the percentage of the total variance explained by each of the 82 principal components (PC). The first three PC explained 85.03%, 9.47%, and 5.50% of the total variance. We used every MAP signal's first three PC scores as their three-dimensional Euclidean Space (x, y, z) coordinates and assigned them to matrix C. Then, we calculated hierarchical clusters of the rows of C with Ward's linkage minimum variance algorithm and a Euclidian metric and encoded this information on the agglomerative hierarchical cluster tree Z. We determined the gap statistic in Z to obtain the optimal number of clusters. We created seven agglomerative clusters from the linkages stored in Z, using Ward's distance as the criterion for defining the clusters. Finally, we plotted and colored the mapped MAPs by their assigned cluster number at the locations specified by their (x, y, z) coordinates.
Results: The MAPs cartesian representations show that MAPs with similar waveforms cluster in the same three-dimensional Euclidean subspace. These patterns identified individuals with dipping and non-dipping blood pressure behavior, which is relevant to clinical management.
Conclusions: Mapping a set of physiological signals into a Euclidian space creates a mathematical formalism that provides a statistical framework to classify physiological signals by their waveform. By applying our method to existing electrophysiological and physiological databases, we can cluster any biomedical time-series (blood pressure, ECG, EEG, EMG, patch-clamp, single-unit recordings, etc.) by physiologic or pathological waveform, so further epidemiological and genetic studies can be conducted on the subjects or tissue samples sharing similar patterns.

Faculty Category

Cell-based experimental evidence to the anti-COVID-19 potential of Ashwagandha and honeybee propolis ingredients

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Background-The COVID-19 pandemic emerged in December 2019 by a novel strain of SARS-CoV-2 (Severe Acute Respiratory Syndrome Coronavirus 2)has led to new endeavours in repurposing of existing drugs, anti-COVID-19 vaccine and drug development. Natural products, due to their general safety and wider availability, have attracted research and public attention. In this study, we report anti-COVID potential of compounds from honeybee propolis and Ayurvedic herb, Ashwagandha. Effect of active ingredients was studied on human cell surface receptors(ACE-2:Angiotensin Converting Enzyme-2/Spike proteinandTMPRSS2:Transmembrane Protease Serine 2),critical for virus infection and virus main protease (Mpro, essential for virus replication),through molecular simulations and in vitro experiments.
Methods-Structure-based computational analyses were performed to predict the effect of honeybee propolis (CAPE: Caffeic Acid Phenethyl Ester and ARC: Artepillin C), and Ashwagandha (With anolides) ingredients on virus-host cell surface receptors. Cell-based assays were used to investigate the effect of these compounds on the expression level of the target proteins and virus replication.
Results-Ashwagandha-derived nine with anolides were tested in silico for their potential to target and inhibit(i) ACE-2 and TMPRSS2 receptors (ii) viral main protease Mpro. We found that most with anolides possess capacity to bind toACE-2, TMPRSS2 and Mpro. On the other hand, CAPE and ARC showed stable interactions at the active site of ACE2 and Mpro. ARC, but not CAPE, showed stable interaction withTMPRSS2.Human cells treated with with anolides, CAPE or ARC showed downregulation of both the receptors. Furthermore, cell-and PCR-based SARS-CoV-2 replication assays endorsed their antiviral activity.
Conclusion-The findings suggest that the Ashwagandha-with anolides and honeybee propolis-derived compounds, CAPE, and ARC, could be helpful in the reduction of viral replication/infection, and hence warrant further experimental and clinical attention.

Development of Surgery Guided NIR Fluorescent Probe Nanoparticles for Cancer Cell Imaging and Targeting

Neeraj Chauhan

Background: Early-stage detection is crucial for successful breast cancer treatment and can significantly reduce breast cancer associated death rates. There are several diagnostic approaches available for early breast cancer diagnosis but lack tumor specificity and expose patients with radiation. Therefore, there is a crucial need to develop newer and safer imaging modalities. Indocyanine green (ICG), an FDA approved Near InfraRed (NIR) fluorescent probe based imaging for early cancer detection and image guided surgery, has gained noticeable attention for the clinical applications as it has high sensitivity, low cost, and real-time visualization/imaging capabilities without ionizing radiation. However, ICG has several limitations associated with its photostability, high concentration toxicity, and short circulation time. To overcome this hurdle, we have recently engineered a novel poly (vinyl pyrrolidone) and tannic acid (PVP-TA) based nanosystem to carry ICG to the cancer cells/tissues.
Methods: Pursuing the novel nanotherapy approach, our lab has developed PVP-TA based ICG (PVT-ICG) fluorescent nanoparticles via self-assembly process. Our optimized PVT-ICG nanoformulation was further characterized for its physicochemical properties. An IVIS imaging system was further used to measure NIR fluorescence of novel PVT-ICG. Moreover, Human cancer (Breast, Pancreatic, Liver and Prostate) tissue microarrays (TMAs) were histochemically stained to assess cancer cell targeting/specificity of PVT-ICG.
Results: PVT-ICG indicated particle size and surface charge ideal for cancer cell/tissue delivery. PVT-ICG, further, demonstrated improved photostability and fluorescent intensity. Additionally, TMA studies exhibited enhanced internalization and cancer targeting/specificity of PVT-ICG nanoparticles compared to free ICG dye in all cancers.
Conclusions: Collectively, our findings suggest that this NIR fluorescent probe PVT-ICG has great potential for becoming a novel and safe imaging modality for breast cancer cells/tumors which can result in early diagnosis leading to improved cancer management.

ERK Required for Lipopolysaccharide-induced TLR4 Internalization in Macrophages
Sara Reyna

Background: Insulin resistance is associated with low circulating levels of lipopolysaccharide (LPS). Binding of LPS to Toll like receptor 4 (TLR4) leads to the internalization and trafficking of TLR4 resulting in activation of downstream signaling pathways. TLR4 internalization in macrophages leads to the activation of pro-inflammatory signaling pathways and production of factors linked to the development of insulin resistance. The extracellular signal-regulated kinase 1 and 2 (ERK1 and 2) are activated downstream of TLR4 and are associated with insulin resistance. We hypothesized that ERK1 and ERK2 regulate TLR4 internalization in macrophages when exposed to LPS.
Methods: We examined whether inhibition of ERK activity blocked LPS-mediated internalization of TLR4 in bone marrow derived macrophages (BMDM). To determine which ERK isoform is involved in regulating TLR4 internalization, we used siRNA to knockdown ERK1, ERK2, or both. BMDM were treated with LPS (100 ng/ml, 6hr). Loss of cell surface TLR4 expression was measured by flow cytometry as a readout for TLR4 internalization.
Results: LPS decreased TLR4 surface expression by 31.3%, but knockdown of ERK1, ERK2, or both prevented LPS-induced decrease of TLR4 surface expression (5.6%, no decrease, 0.9%, respectively). In addition, knockdown of either ERK1, ERK2, or both in RAW264.7 cells and BMDM prevented LPS-induced activity of Rab5, the early endosomal protein associated with TLR4 translocation, and IFN-beta and RANTES production, respectively.
Conclusions: ERK regulates TLR4 endocytosis and trafficking in macrophages. We propose that ERK positively regulates LPS-mediated TLR4 internalization and inhibition of ERK signaling will protect against insulin resistance.

Neutralizing anti-RBD fraction for SARS-CoV-2 is associated with the interaction waist circumference and sex. An ESFUERSO preliminary report on university students
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In a previous study we reported that 25% of college students had a family history of type 2 diabetes (T2D), and 39% of hypertension. Interestingly, between 17 to 47% reported not knowing about T2D or hypertension, neither the existing obesity-metabolic problems (ESFUERSO study). The COVID-19 pandemic forced confinement and modifications in food intake, physical activity, and psychological stress. This study aimed to analyze if the immune Ig-G anti-RBD (protective epitope in S protein) response associated with type of vaccination, metabolic risk, perceived stress, and history of COVID-19 contacts. We included 116 students at the 3th year of follow up in the ESFUERSO cohort at Reynosa. Mean age 21.4 (SD 1.04) years old, BMI 28 (6.6), females 70% (81/116). The serum concentration of Ig-G anti-RGB measured by ELISA adjusted by sex, age, body fat percentage, and BMI was analyzed. Researchers performed a multiple regression analysis with Stata V17.0. We found that 70% of the students had a family history of diabetes, hypertension, and/or obesity at baseline. Only 5 (4%) students did not have any vaccine at the time of the study, 102 (88%) were vaccinated with Moderna or Pfizer and 9 (8%) with other vaccines (Cansino, Sinovac). The prevalence of positive anti-RBD was 91%. The body fat percentage interacted with sex (p=0.034) explaining the serum concentration of antiRBD decreased as adiposity increases in men, but increased in women. The interaction remained is spite of type of vaccination. We found no differences among metabolic risks for food consumption, distress, uncertainty, lack of sleep, sadness, and anxiety were associated with metabolic problems. Our model predicts neutralizing anti-RBD had multiplicative interaction by sex and body fat percentage (increases in females and decreases in males), with no effects on stress score or food consumption.

Self-inflicted Injuries Racial-Based Differences in Substance Abuse and in Potential Years of Life Lost
DEMBA FOFANA, JOY ALVARADO, SIDKETA FOFANA AND JEFF SKUBIC, University of Texas Rio Grande Valley

Background and Methods: Suicide is a leading cause of death in the US. Substance abuse is a known risk factor for suicide. The exact correlation between substance abuse and suicide is unknown. In addition, the potential years of life lost due to suicide is unknown. A 10-year review (2007-2016) of self-inflicted injury individuals in the National Trauma Data Bank (NTDB) is performed. Pearson Chi-square statistical test is utilized for the analysis.
Results: Our results also indicate that those tested positive for substance abuse have a higher Hospital Discharge Disposition death rate compared to those who were tested negative, 56.79% who died were tested positive. We also found that Years of Potential Life Lost (YPLL) from suicide is 224603 for Whites, 31156 for Blacks, 3054 for Native Americans, 5474 for Asians,38758 for Hispanics, 106806 for Unknown, and 6594 for others. The most common methods of suicide are Cut/Pierce (40.56%), Firearm (31.26%), and Fall (10.50%), and the remaining percentage for other means of suicide; this is strongly associated with substance abuse($p-value \leq .001$). Those who committed suicide by Cut/Pierce 61.81% of them were drug tested positive, by Firearm 61.24%, and by Fall 60.44%. Our results also indicate that deathrate related to illicit drug is slightly higher than prescription drug (see figure). Among the self-inflicted injury in the sample of size 44683,52.64% percent-age of them are tested positive of illicit substance usage and the remaining are tested negative. And also, those with severe traumatic brain injury, 51.98% are tested positive of illicit substance use. By race group, the distribution of illegal use of drug is as follow: 59.06% of self-inflicted injuries Blacks are tested positive for illicit drug, 50.22% for self-inflicted injuries Whites and 55.24% for self-inflicted injuries Hispanics.
Conclusions: This paper provides a succinct overview of substance abuse (illicit and prescribed) and by race groups using trauma database. The paper also highlights some potential years of life loss due to self-inflicted injuries. In addition, the paper points out the distribution of methods of suicide.

Synthesis, biological evaluation and molecular docking studies of novel 3,5- disubstituted 2,4-thiazolidinediones derivatives
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A series of thirteen novel 2,4-thiazolidinedione derivatives were synthesized through three step reaction procedure. The title compounds were synthesized by Knoevenagel condensation at the 5th position of the 2,4-thiazolidinedione ring. Various physicochemical and spectral studies were conducted to characterize the synthesized derivatives including- IR, Mass, 1H-NMR, 13C-NMR and elemental analysis. The derivatives were screened for *in vivo* anti diabetic, *in vivo* anti-inflammatory and *in vitro* free radical scavenging activities by carrageenan induced rat paw edema method, alloxan induced diabetes in wistar rats method and FRAP (ferric reducing antioxidant power) method respectively. Some of the derivatives emerged out as potent antidiabetic, anti inflammatory and free radical scavenging agents. Molecular docking was carried out to investigate some possible structural insights into the potential binding patterns of the most potent anti-diabetic molecules NB7,NB12 and NB13 with the active sites of target PPARγ (PDB ID: 2PRG) using MOE software. Dichloro derivative compound **NB-7** has shown great potential in the present study as it not only has maximum antidiabetic activity but also possess excellent anti-inflammatory and antioxidant potential.

The Role of Community Pharmacists in the provision of Medication for Opioid Use Disorder Treatment in Rio Grande Valley
Tamara Al Rawwad

Background: The misuse of opioids, including prescription opioids, heroin, and fentanyl, has reached epidemic proportions in the US, resulting in more than 68,000 overdose deaths in 2020, and a total of $78.5 billion a year of economic burden. In response to this crisis, the US Department of Health and Human Services (DHHS) released a strategic plan to combat opioid abuse and misuse, recommending a multidisciplinary approach, including the inclusion of pharmacists in the efforts. The aim of this study is to examine pharmacists' perception of their role in the provision of medication for opioid use disorders (MOUD) in addition to their attitudes towards integrating pharmacists in the provision of MOUD in OUD treatment programs.
Methods: This study followed a descriptive qualitative design. Data were collected from participants (N=20), using in-depth, semi-structured interviews. Data were transcribed and entered into ATLAS.ti©, for coding and analysis. A thematic analysis approach was used to analyze the data.
Results: Through the preliminary thematic analysis, five main themes emerged: perceived roles of pharmacists in the provision of MOUD, perceived barriers to integrating pharmacists into MOUD treatment programs, perceived facilitators of the integration, pharmacists' desired education/training, and factors influencing viability of integrating pharmacists into MOUD treatment centers/

programs. Pharmacists expressed immense interest in being part of MOUD treatment programs performing medication therapy management and counseling. Pharmacists listed potential lack of cooperation from providers and clinical logistical issues as barriers to integration, and collaboration between pharmacists and providers and integrating pharmacists into smaller settings as facilitators of integration.
Conclusion: The re-evaluation of how MOUD treatment is provided, and who are the health care professionals involved, is an important step to achieve the best patient health outcomes. Bringing pharmacists to the table will require careful study of both what they believe they can do and further analysis of what is preventing them from realizing or utilizing that potential. Pharmacists are eager and well equipped to be part of the provision of MOUD. However, education and training need to be designed to allow for more comprehensive preparation for this critical role.

Trusted Sources of Health Information During the COVID-19 Pandemic

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Background: As the role of media has evolved with display and consumption of health information, the need to decipher the quality of the information has become exceedingly important. This became more important during the covid-19 pandemic, when information was being formulated and released nearly real-time. Prior to the pandemic, government agencies, health professionals and authorities were generally trusted sources of information. Additionally, information passed more casually through family and acquaintances was also something people tended to rely upon. This paper explores the self-reported trustworthiness of different health information sources during the pandemic and also seeks to rank the importance from health information consumers.
Methods: The study employed theCOVID-19 Impact on Health and Well-being Survey (IHWS) created by members of UTRGV. Inside the IHWS demographic information was collected along with questions on trusted sources on health information. To be included for analysis all trusted sources questions needed to be complete;640 of 836 observations wereused. Using Principal Component Analysis (PCA) important factors on trusted sources of health information were created. Descriptive statistics were created and stratified by the PCA factors. Multivariable regression was then used to explore if sociodemographic(age, race, sex, education, income)variables were associated with mean factor scores. An alpha of 0.05 was used to determine significance. SAS 9.4 was used to perform all analysis.
Results: The factors identified were Government/Non-Profits/News Outlets (F1), Family/Friends/social media(F2), Health Professionals (F3). The cumulative variance explained by the three factors was 67.1%.The majority of respondents were female (n=492, 78.2%), Hispanic (n=353, 55.3%), and college graduates(n=480, 75.1%). Age was associated with all factors, with younger respondents having less trust in sources. Income group was associated with F1 and F2, with higher incomes showing more trust in these factors. Race was associated with F1 with Caucasians showing less trust than Hispanics and other race groupings.
Discussion: This research found three important factors on grouping trusted sources of information with domain specificity. The most important factor was government/non-profits/news outlets. Differences were found across sociodemographic across the factors demonstrating tailored informational dissemination might be more effective based on these characteristics.

POSTER PRESENTATION ABSTRACTS

Undergraduate Student Category

Characterization Of The Female Reproductive Cycle In The Syrian Hamster
Fernando Dominguez, Esperanza Alaniz

Gender and biological sex are important variables in biomedical research, and a female's reproductive status is an important factor that plays a role in and impacts health outcomes. Understanding how the female reproductive cycle affects behavior may help in the development of treatments that can be implemented in a clinical setting. Following Dr. Orsini's protocol, published in 1961, to identify and document the different stages of the female hamsters' 4-day estrous cycle, we characterized the female hamsters' estrus cycle by inspecting vaginal discharge phenomena. Orsini (1961) named day 1 discharge of the cycle as translucent (TS), day 2 as postestrus (PO), day 3 as a waxy plug (WP), and day 4 as negative (NEG). We cycled 20 female hamsters from our colony to replicate Orsini's findings and we also tested the hypothesis that there are individual differences in the pattern of the estrous cycle. We found that over a 29-day period, the hamsters were in TS on average 3.2 days (standard error = 0.337); in PO 4.55 days (SE= 0.344); in WP 2.65 days (SE= 0.365); and in NEG 14.1 days (SE= 0.566). These data support our hypothesis that there are individual differences in the pattern of the female cycle. Next, we conducted a 10-minute open-field experiment to investigate sex differences in anxiety-like and exploratory behaviors. We found that female hamsters traveled an average 41.5 m, which was significantly higher vs males that traveled 33.6m ($p<0.05$), whereas males spent significantly more time immobile (mean = 157.7) compared to females (mean= 103.6) ($p<0.05$). We also plan to determine how each stage of their cycle affects them during experiments versus male hamsters. Our goal is to develop the female hamster as a model to study how reproductive status impacts behavior, cognitive function, and health outcomes.

FOXO Transcription Factors & Gene Expression
Angelica Reyes, Larissa Barroso

Evolutionarily conserved, partially redundant Forkhead box subfamily O transcription factors (FOXO -1, -3 and -4) perform diverse functions in a context-dependent manner, impacting fundamental biological processes such as stem cell homeostasis, cell fate determination, cell cycle, metabolism, and apoptosis. Highly homologous and partially redundant FOXO -1, -3 and -4 factors are differentially localized in U87MG glioblastoma cells and myoblasts, with FOXO4 strongly targeted to the nucleus, while FOXO -1 or -3 are mostly cytoplasmic in U87MG cells and not translocated to the nucleus by TNFα in myoblasts. We hypothesize that sequences within the FOXO protein direct its distinct subcellular localization in U87MG cells and myoblasts. Using a battery of chimeric fusion constructs, we will map regions within each FOXO factor that determine specific cellular localization patterns. Then, based on chimeric fusion studies, mutants will be made to examine specific regulatory mechanisms that underpin FOXO localization. Chimeric fusions will ultimately be investigated in functional assays to identify specificity determinants. This project will produce innovative tools to better understand the roles and regulation of FOXO transcription factors to elucidate mechanisms that drive distinctive subcellular localization patterns (and ultimately functions) in the contexts of U87MG and myoblasts.

Gamma-aminobutyric acid in the Midbrain (GABA): Role in Sensation, Perception, and Neurological Disorders
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Background: Altered GABA expression in the midbrain is associated with neurological conditions like epilepsy and Parkinson's Disease. In the genetically epilepsy prone rat, an increase in GABA neurons in the inferior colliculus increases seizure susceptibility. In contrast, Parkinson's Disease is associated with altered GABA expression in the substantia nigra. The purpose of this study is to identify patterns between the sensory and motor regions of the midbrain and to quantify a baseline of GABA neurons in these areas. **Methods:** The Allen Institute's reference atlas of the mouse and BrainMap.org was used to identify the sensory and motor areas of

the mouse's midbrain. Using the ISH tool in Allen Institute, a prior study on the GAD-1 gene was used to quantify GABA neurons in the midbrain. Midbrain images were obtained from a 56-day old C57BL/6J mouse strain. The total count of GABA neurons in each major sensory and motor areas were recorded. Samples of the Monodelphis domestica midbrain tissues were obtained from the laboratory and used for comparison.
Results: The combined motor areas of the midbrain were significantly larger than the combined sensory areas. High density of GABA expression was found in the superior colliculus. Clustering and higher quantity of larger GABA neurons were most prominent in the superior colliculus. The sensory midbrain areas of the Monodelphis were larger in size compared to the mouse. The total count for the superior colliculus was estimated to be 1674 neurons, while the inferior colliculus had a total count of 375 neurons. The total count of GABA neurons in the motor related areas of the midbrain was 3,690.
Conclusion: In the Mus musculus, there was a greater density and quantity of larger GABA neurons within the sensory area of the superior colliculus. The total area of the motor areas of the midbrain was significantly larger than the sensory areas in the Mus musculus. When comparing the two midbrains, it appeared that the Monodelphis domestica's sensory areas of the midbrain were distinctly larger than the mouse. Deviations from our baseline could help indicate whether abnormal GABA expression in the midbrain is linked to neurological conditions.

Optimization of a Protocol for Temporary Deafferentation and Proof-of-Concept of Effectiveness for Upper Limb Rehabilitation
Mónica Lozano García

Background: Temporary deafferentation (TD) is a technique that uses short-term anesthesia, to inactivate sensation pathways from stronger muscles so that the brain releases inhibition that was placed on weaker muscles, thereby strengthening them. There are many methods to do TD, and an optimized protocol for TD has yet to be fully developed. Here, we sought to optimize a protocol for TD using 5% lidocaine cream adding arm and hand exercises. Then, as a proof-of-concept, we evaluated hand dexterity and muscle strength to see if there was improvement after a single session of TD and training. We hypothesized that triceps would show a gain in strength, with minimal changes in hand dexterity.
Methods: *Optimization:* Lidocaine cream (5%) was applied to the right biceps and sensation was assessed every 15 minutes using von Frey monofilaments. Sensation was assessed for 75 minutes. Percent sensitivity was assessed across time. *Proof-of-Concept:* Baseline dexterity and strength of biceps and triceps were assessed using the nine-hole peg test and a hand-held dynamometer, respectfully. Lidocaine cream (5%) was applied to the right biceps of 20 healthy volunteers and was removed after 50 minutes. Thirty minutes of exercises to activate their triceps were then performed, and measurements of dexterity and biceps and triceps strength were again recorded.
Results: Peak deafferentation was achieved 50 minutes after lidocaine application, with at least 50% of the monofilaments having less than 50% sensitivity. Our results suggested that 50 minutes is required to achieve maximum TD after application of lidocaine cream. Our preliminary data suggests that participants' dexterity decreased (d = .33; p = 0.066), and biceps strength increased by a small to medium effect size after one session of TD and training (d = .31; p = 0.027). No statistically significant changes were observed in triceps strength.
Conclusions: Our results suggest that one session of TD and exercises can improve biceps strength and decrease dexterity in healthy subjects. Our future work will separate the effects of TD and exercises and see how that impacts muscle strength and dexterity.

The Effectiveness of Temporary Deafferentation for Upper Limb Rehabilitation
Daniel Salinas, Chelsea Erazo Macias

BACKGROUND: Temporary deafferentation (TD) is an approach that has been investigated in rehabilitation practices to improve motor function in people with spinal cord injuries. The overall goal of temporary deafferentation is to voluntarily reduce sensory input into the nervous system to improve efferent output. Temporary deafferentation is typically achieved using either topical or injectable anesthetics. Recently, our group sought to optimize a protocol for temporary deafferentation using topical anesthetic cream, and the results suggested that temporary deafferentation was achieved 50 minutes after anesthetic cream application. Here, we aimed to determine if our optimized protocol impacted limb electromyography (EMG) after the intervention. We focused our study on the biceps and triceps muscles, due to future implementation in populations with upper limb motor disabilities.
METHOD: Twenty healthy subjects were recruited to participate in a single-session study. Using LabChart, subjects' electromyography (EMG; root-mean-square) of the biceps and triceps were assessed before and after intervention with temporary deafferentation and task training. Temporary deafferentation was achieved by applying 10cc anesthetic cream to the subject's right

biceps for 50 minutes. Following temporary deafferentation, the subject completed 30 minutes of mild-to-moderate upper limb training tasks with their right arm.
RESULTS: An ANOVA to test the main effect of the intervention revealed that healthy participants' triceps muscles excitability significantly decreased by a small to medium effect size, d = .31, $F(1, 329) = 7.66$, p d = .24), and fifteen did not (d = .49). Whether the intervention influenced triceps muscles excitability depended on the participants, $X^2 = 352$, p [1], BMI[2], fat percentage[3], and arm width[4], p including Male gender[5], p $X^2 = 179.19$[1], 352[2,3,4], 5.70[5].
CONCLUSION: Results show the intervention improved triceps muscle excitability for selected healthy participants. Preliminary findings suggest the protocol's ability to accelerate rehabilitative outcomes for people with upper limb motor disabilities, which will be examined in the next phase of the study; additionally, we aim to specify the main effect of TD, separating the task training effects.

The Eyes Beyond the Screen: Digital Media Policy and Child Health
Yahia Al-Qudah
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Background: Modern communication technology and digital media have provided society with a foundation for instant messaging. Pictures, videos, and texts connect individuals with families, friends, and the world. Consequently, digital media has accelerated exposure to risk in which children and adolescents are most vulnerable. This project's objective is to 1) congregate and highlight current knowledge about the impact of digital media on child health, and 2) underline deficiencies in related laws and regulations as well as offer solutions in digital media policy.
Methods: A systematic literature review was conducted through the JAMA Pediatrics database with keywords such as "digital media," "social media," "screen time," "cyberbullying," "child sexual abuse material," "online exploitation," "sextortion," and "child privacy" to accumulate information from relevant studies and articles elaborating on adverse child health outcomes in relation to digital media use. Only peer-reviewed full-text publications between 2018 and 2021 were selected and 10 articles were obtained. The impact of digital media on child and adolescent health was synthesized, as shown in the results section. Furthermore, review of national digital media law was conducted through Congress.gov, and potential policy solutions are elaborated in the conclusions section.
Results: (1) Screen time through social media use, gaming, and television among children and adolescents has dramatically increased, as charged by the COVID-19 pandemic, and is associated with higher levels of depression, anxiety, low self-esteem, hyperactivity, inattention, and conduct problems. (2) Reduced social contact with friends, peers, and teachers increases the risk of loneliness and helplessness which correlate to mental health harms. (3) Targeted advertisements attract young adolescents to increase screen time, establish brand allegiances, and form spending habits. (4) Time spent online is associated with increased risk of cyberbullying, sextortion, genuinely threatening messages, psychologically threatening messages, and intentional misinformation which has a strong correlation to negative mental health symptoms. (5) The National Center for Missing and Exploited Children reported over 21.7 million submissions of child sexual abuse material (CSAM) in 2020, a 106% increase since 2019. (6) Section 230 of the Communications Decency Act protects social media sites from being sued over posts from their users, resulting in poor filtration of inappropriate material.
Conclusions: Children and adolescents require modern media literacy to battle potential negative mental health symptoms heightened by the growing dependency on technology. The national government must enact legislation to hold social media companies accountable by straining their sites from harmful and inappropriate material. Proactive legislative measures such as negating targeted advertising for minors and an opt-out function from biased algorithms in social media apps prioritize lowering screen time over increasing business revenue.

YBX1 Modulates Drug Resistance in Liver Cancer
Ana Gabriela Ayala Pazzi

According to the Texas Cancer Registry, hepatocellular carcinoma (HCC)is the sixth most common cause of cancer death. In 2015, Texas had the country's highest incidence rate and the fourth highest mortality rate. Texas Hispanics (87% of Mexican origin) showed the highest incidence and mortality rates compared to the overall US Hispanic population, with individuals of Mexican origin having the highest rates. The Rio Grande Valley, which is predominantly Mexican, is extremely affected by this fact, which exacerbates the need to address this issue within our community. A major challenge in improving patient therapy in liver cancer is Sorafenib resistance. Sorafenib is a tumor-suppressing drug that is used as a first-line treatment for late-stage liver cancer and is

especially prescribed to patients presenting relapse and recurrence of HCC. In addition, we have identified a transcription factor, YB1, which is a common element in poorer patient outcomes across breast, colon, liver, and other types of cancer. We are proposing that YB1 plays an important role in the development of Sorafenib resistance in liver cancer. Our models to study the mechanism of the development of Sorafenib resistance are HCC cell lines from the American Type Culture Collection, enhanced with over expression of YBX1. We analyzed the Sorafenib IC50 by performing molecular assays to validate the upregulation of drug resistance by YBX1 in HCC. Additionally, we will show that overexpression of YBX1 increases cell viability, thus cancer progression, in the presence of Sorafenib, as well as overexpression of YBX1in the Sorafenib resistant cell lines.

Graduate Student Category

Prevalence of metabolic syndrome in HIV patients under antirretroviral treatment in CAPASITS from Reynosa Tamps.

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Introduction: Highly effective antiretroviral therapy has been demonstrated a decrease in morbidity, mortality, life expectancy and quality of life of HIV-infected patients. However, HIV-infected persons, over time of receiving antiretroviral treatment, may develop different metabolic disorders, such as adipose tissue, lipid metabolism and the development of arterial hypertension, increase in BMI, decrease in HDL cholesterol and insulin resistance which can with lead to the development of metabolic syndrome.
Methodology: A cross-sectional observational study was carried out, the sample consisted of 122 HIV patients on ART. All patients signed an informed consent form. Sociodemographic data and clinical history were collected. Subsequently, anthropometric data (height, weight and waist circumference) and vital signs (blood pressure) were measured.
Results: A total population of n=122 participated in this study, of which the majority was male with 62.3% (n=76) and 37.7% (n=46) female. The mean age of the patients was 37.54 (±11.48) years, with a range of 19 to 60 years. The frequency of Metabolic Syndrome of HIV seropositive patients under antiretroviral treatment is observed, where 41%(n=50) have metabolic syndrome, while 59% (n=72) do not present metabolic syndrome. In women, the metabolic syndrome is present in 64% (n=32) while in men it is present in 36% (n=18) with statistical significance (value of p= .000).
Conclusion: There is a high prevalence of metabolic syndrome in our study population 41% in which the female gender predominated in patients receiving antiretroviral treatment in the CAPASITS of the city of Reynosa, Tamaulipas.

Beta-3 adrenergic receptor blockade prevents alterations in feeding behavior in lymphoma-bearing mice in a sex-dependent manner

Isaias Gutierrez-Leal

Introduction
Cancer cachexia is a metabolic syndrome defined by an ongoing loss of adipose and muscular tissue and is characterized by a reduced food intake. Local b-3 adrenergic receptor activation in adipose tissue induces lipolysis, whereas b-3 signaling in tumors has been shown to be tumorigenic in some cancer models. Therefore, b-3 signaling may be a therapeutic target in cancer cachexia. The aim of this study was to assess the role of b-3 adrenergic signaling in feeding behavior, body composition, and tumor progression in the L5178Y-R murine lymphoma model.
Methods
In our study we used BALB/c mice of both sexes, which were divided in tumor-free and tumor-bearing groups. For the tumor model, L5178Y-R lymphoma cells were subcutaneously administered into animals right flank. These groups of mice intraperitoneally received L-748,337, a beta-3 antagonist, at a 50 ug/kg/day dose, starting the day after tumor implantation. Food and water intake were monitored every other day and body mass index (BMI) was calculated at the end of the experiment. Animals were euthanized for necropsy, when endpoint criteria were achieved. Transcriptional expression of Ucp-1, a molecular marker of thermogenesis, was quantified in interscapular adipose tissue.
Results
We observed a 15% and 35% reduction in food intake in tumor-bearing male and female mice, respectively. This effect was not observed in male mice treated with the b-3 adrenergic receptor antagonist L-748,337. In females, such an effect persisted despite

beta-3 blocking. Reduced water intake was also observed in tumor-bearing animals, which was not altered by beta-3 antagonism. We also observed that tumor-free mice of both sexes showed reduced water intake after L-748,337 treatment. Furthermore, reduced BMI was observed in tumor-bearing animals of both sexes, which was not changed by b-3 blocking. Interscapular adipose tissue loss was observed in females (51.06%) but not in males. Additionally, 1.7-fold and 4.4-fold reduction in Ucp-1 gene expression was shown in tumor-bearing males and females, respectively. Decreased final tumor weight was observed only in tumor-bearing females treated with L-748,337 (p

Conclusion

In L5178Y-R tumor-bearing BALB/c mice, selective blocking of beta-3 adrenergic signaling prevents alterations in food intake in a sex-dependent manner.

Challenges in genetic counseling in hereditary cancer syndromes in a Mexican oncologic center

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Background: In Mexico, hereditary cancer is underdiagnosed, medical geneticists give genetic counseling, but the access is limited due to the socio-economic characteristics of the population. The CUCC (Centro Universitario Contra el Cáncer) Early Cancer Detection Clinic (CECIL) created a model in which patients without cancer are enrolled in a prevention cancer screening program.
Methods: From 2016 to 2021, 3014 patients were enrolled in the prevention program. Patients were evaluated with a hereditary cancer risk survey before a consultation. Those with at least one familial hereditary risk positive answer were assessed in a consultation. We also included patients with cancer diagnoses referred by oncologists of the CUCC. Those who fulfill hereditary cancer criteria were referred for genetic testing.
Results: A total of 1119 subjects were evaluated. Of these, 248 (21%) were candidates for genetic testing, only 149 (60%) could be analyzed, 52 probands (59%) and 32 relatives (51%) had at least one variant. Among the probands: 33 had HBOC (Hereditary Breast and Ovarian Cancer syndrome), 7 had Lynch, 1 LFS (Li-Fraumeni syndrome), 1 LFLS (Li-Fraumeni like syndrome), 1 FAP (Familial Adenomatous Polyposis), and 9 had benign variants. In the relative's group: 17 had Lynch, 10 HBOC, 1 LFS, and 4 FAP. To date, 3 patients under surveillance had an in situ lesions (1 endometrial and two colon), and 3 more had a premalignant colon lesion, one in the not tested group. To achieve the genetic test cost for the probands, 50% had partial sponsors, 31% paid for their tests, research projects were supported by 13%, and 4.5% were donations. Among relatives, 94.4% paid for the tests, and 5.5% were supported by research. All relatives were tested using an in-house low-cost test.
Conclusion: The model's success made awareness of these diseases, leading last year to the formation of a state detection program, including all public and private health institutions attending to patients with cancer, these patients are referred to CECIL. We found an effective way to find support low-cost genetic testing via foundations.

CLINICAL CHARACTERISTICS AND RISK FACTORS FOR MORTALITY DURING THE 'FIRST WAVE' OF COVID-19 IN REYNOSA, TAMAULIPAS

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Background. The COVID-19 pandemic has impacted public health in Mexico. As of February 2020, there have been at least four "waves" of contagion that resulted in 5.82 million positive cases and more than 325 thousand deaths. At the beginning of the COVID19 pandemic, hospital and population-based information was available, frequently with non-specific symptoms. Little was known about the risk factors for mortality in specific conditions. We described the clinical characteristics of patients with COVID-19 in Reynosa, Tamaulipas during 2020 and identified the risk factors for mortality.
Methods. The COVID-19 cases registered from March to November 2020 in Reynosa were divided into survivors and non-survivors. The study had a retrospective cohort design. Data was obtained from the platform of the Respiratory Disease Surveillance System (SISVER), belonging to the National Epidemiological Surveillance System (SINAVE) of the Mexican Ministry of Health

(https://sinave.gob.mx/). The variables considered were the age and gender of each patient. Twenty-five symptoms were included (fever, cough, headache, myalgia, arthralgia, among others); the outcome variable was the detection of COVID-19. Associated comorbidities were diabetes, obesity, hypertension, among others. The outcome variable was mortality. Data were analyzed using χ 2 tests, Mann-Whitney tests, principal component analysis, and the Cox regression model.
Results. The highest number of COVID-19 cases and deaths was observed in July, in men between 36-40 years old. The most frequent symptoms (37-51%) were headache, fever, cough, myalgia, and arthralgia. Clinical characteristics between survivors and non-survivors were significant ($P<0.05$) in all cases, except for age (21-40 years), COVID-19 contact, and history of asthma. Age, gender (men), and diabetes, hypertension, heart disease, COPD, and chronic kidney disease (CKD) were associated with risk of death from COVID-19 ($P<0.05$). The highest fatality rates were observed with patients over 80 years of age, ICU admission, or need for intubation ($P<0.0001$).
Conclusions. The most frequent symptoms in positive COVID-19 patients in Reynosa during 2020 were headache, fever, cough, myalgia, and arthralgia. Age, gender and diabetes, hypertension, heart disease, COPD, and CKD increase mortality. The factors with the highest risk of death were age over 80 years, admitted to the ICU or intubated.

DETERMINATION OF HFE C282Y MUTATION AND ITS ASSOCIATION WITH THE IRON STATUS AND VIRAL LOAD IN HIV PATIENTS FROM REYNOSA, TAMAULIPAS.

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Background: The HFE protein has a fundamental role in iron homeostasis, the HFE C282Y mutation prevents the specific function of the protein, causing greater intestinal absorption of iron and intracellular accumulation. The HIV virus causes a disease that attacks the cells of the immune system, mainly CD 4 T lymphocytes inducing their destruction and immunosuppression of the patient. Some viruses have the ability to disrupt cellular metabolic processes during their own replication, such is the case of HIV-1, which is involved in alteration of iron metabolism resulting in an overload of iron.
Methods: An exploratory, descriptive, cross-sectional and prolective study was conducted, including 68 patients, ≥ 18 years old, HIV positive, attended at CAPASITS, through informed consent and application of an interview on lifestyle and health, were determined: blood pressure, anthropometric measures, CD 4T cell count, viral load, and iron status (ferritin, iron and transferrin).
Results: 41 participants were male sex (60%) and 27 (40%) of the female sex, average of 38.22(±11.05 SD)years, with a BMI 25.30 (± 4.70SD). The presence of theC282Y mutation was not detected, only the wild variant (100%) was identified. Patients with viral loads ≥ 40 copies/ml, were ruled out when relating viral load vs. serum ferritin ($r= 0.594$, $r2= 0.353$ and $p= 0.004$) with statistical significance, with a ferritin mean of 231.5 (± 216.04SD).
Conclusions: TheC282Y mutation of the HFE gene is not present in the study population, due to its low frequency, so it is not related to iron overload. Because there is ahigh viral load, serum ferritin levels will also increase, and this may be due to the fact that HIV in addition to interfering with the Iron metabolism induces alterations in the synthesis and regulation of the secretion of this protein.

Effect of confinement by SARS-CoV-2 on the degree of steatohepatitis in university students from Reynosa Tamaulipas.

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Introduction: Healthy lifestyles are relevant for several diseases, steatohepatitis, although little known, is common in young people. There are reasons to be concerned about homebound college youth who are at risk for steatohepatitis. By restricting the mobility of the population, the risk factors for weight gain and the intake of calorie-dense foods increase, which are elements associated with steatohepatitis.
Objective: To determine the effect of confinement during the COVID-19 pandemic on the degree of steatohepatitis by comparing transient elastography results taken before and after confinement. Method: Longitudinal study. A sample of 114 young university students of random sex was included. The transient elastography technique (FibroScan) was implemented, determining the degrees of steatosis and hepatic fibrosis by performing the test before and after the confinement of the participants. Student´s t-test was used to analyze the differences in the degrees of steatohepatitis before and after confinement.
Results: the degrees of steatosis during the first sampling were S0 (52.6%), S1 (14.9%), S2 (5.3%) and S3 (27.2%) (m = 250.89, DE= ± 56.91), in the second sampling were presented S0 (56.1%), S1 (13.2%), S2 (5.3%) and S3 (5.4%) (m = 243.81, DE = ± 52.330), the

relation of both samples was (p = 0.131). The results in the degrees of fibrosis in the first sampling were F0 (91.4%), F1 (6.1%). F2 (2.6%) (m= 4.80, DE = ±1.11), in the second F1 (95.6%), F2 (3.5) and F2 (0.9%) (m = 4.33, DE = ±1.16) and the relation of the two sampling was (p= 0.000).
Conclusions: The degrees of hepatic fibrosis presented significant changes, on the other hand, steatosis tends to decrease, but the change is not significant, however, it is necessary to investigate with third variables to detect other factors involved in the changes.

Identification of miR-660-5p targets involved in breast cancer progression

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Background: Breast cancer (BC) is the most diagnosed cancer in women globally. MicroRNAs (miRNAs) participate in different processes of BC; their deregulation can make them act as oncogenes or tumor suppressors, participating in cancer progression. Using the TCGA (The Cancer Genome Atlas) database, we found miR-660-5p significantly overexpressed and associated with poor survival in patients with this pathology. It is reported that miR-660-5p induces proliferation, migration, and invasion in BC. However, the specific targets of this miRNA that induce each of these processes are unknown. In this project we propose to identify the targets of miR-660-5p involved in proliferation, migration, invasion, and angiogenesis in BC cells.
Methods: The basal levels of miR-660-5p were determined by RT-qPCR. The effect of miR-660-5p was evaluated on proliferation, invasion, and migration processes in MDA-MB-231 and MCF-7 cells, and angiogenesis in HUVEC cells transfected with the miR-660-5p inhibitor. We identified targets of miR-660-5p using different databases, and we evaluated their expression by RT-qPCR in plate.
Results: In this study, we found that miR-660-5p is significantly upregulated in BC cells MDA-MB-231 and MCF-7, compared to normal breast cells MCF-10A. In addition, we observed a significantly decrease in the processes of proliferation, migration, and invasion in BC cells, compared to untreated cells and negative control group. Similarly, we observed a significantly decrease in the angiogenesis process in HUVEC cells, compared to untreated cells and negative control group. Likewise, by analyzing the different databases and the literature, we found a total of 21 miR-660-5p targets involved in oncological processes.
Conclusions: miR-660-5p is overexpressed in BC cells compared to healthy breast cells. Furthermore, miR-660-5p induces the processes of proliferation, migration and invasion in BC cells, and angiogenesis in HUVEC cells. The expression of seven of the predicted targets were increased due to the effect of the miR-660-5p inhibitor.

microRNA-34a AND LONG NON-CODING RNA MALAT1 IS ASSOCIATED WITH HPV STATUS AND VIRAL LOAD IN PREMALIGNANT CERVICAL LESIONS.

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Background: Cervical cancer (CC) is one of the most common gynecological malignancies in the world, and human papillomavirus (HPV) infection is the most important risk factor for their development. Although there are methods for the early detection of CC and HPV infection, but there are not highly sensitive and specific, for it´s necessary to investigate alternatives such as miR-34a and MALAT1, implicated in the pathogenesis of CC. The objective was to evaluate the association of HPV status, viral load, the presence of coinfections, and the grade of CC precursor lesions with miR34a and MALAT1 expression in patients with high and low-grade cervical lesions (CL) and patients without CL but HPV+.
Methods: Liquid-based cervical cytology (LBCC) specimens were obtained from 67 women diagnosed with low and high-grade CL, as well as LBCC HPV+, from which DNA and RNA were extracted. From DNA we genotyped and quantified the viral load for HPV 16, 18, and 51. From RNA, we performed a retrotranscription and evaluated the expression of MALAT1 (n=67) and miR-34a (n=29), all using

a droplet-digital PCR assay. Statistical analysis was performed with SPSS 27.0 software using U Mann Whitney and Kruskal-Wallis tests.
Results: We identified a statistically significant association between the underexpression of miR-34a, HPV+ status (p=0.010), coinfections (p=0.030), low (p =0.042), and high viral load (p=0.014), but not with the lesion grade. Also, MALAT1 overexpression was associated with HPV+ status (p=0.008) and high viral load (p =0.027), but not with co-infections or the grade of CC precursor lesions.

Non-Prescribed Pain Reliever Trends from 2011-2020 and their Effects on Uninsured Americans' Mental Health
Samantha Guajardo

Background: In 2019, it was reported by the National Survey of Drug Use and Health (NSDUH) that 10.1 million Americans misuse pain relievers, and of those individuals, 50.8% were not prescribed by a health care provider. The same report also indicates that there is a direct correlation between substance use and mental health disorders (NSDUH, 2019). In 2020, the NSDUH reported that 49.5% of Americans do not receive mental health treatment for their substance use disorder. Of that percentage, 30.4% did not receive treatment for health insurance reasons. According to the CDC, 31.6 million Americans reported not being insured in 2020.
Objective: The objective of this study is to examine trends in uninsured Americans that misuse non-prescribed pain relievers from various ethnic, educational attainment, and age groups. Moreover, individuals' mental health status and whether or not they attended support groups will also be examined.
Methods: Data used in this study were obtained from the 2011-2020 NSDUH. Besides demographic data, NSDUH conducts national surveys to monitor individuals' substance use history, treatment history, and perceived need for treatment among civilian populations aged 12 and older. The data helps to estimate trends over time and determine the need for treatment.
Results: This study expects to explore the relationship between non-prescribed pain reliever usage and support group participation among different ethnic, educational attainment, and age groups. By exploring the data, we expect to find a significant difference among demographic groups and a correlation between uninsured Americans that misuse non-prescribed pain relievers and those that attend support groups.

Prenatal cafeteria diet exposure promotes lymphocyte infiltration into the brain and autism-like behavior in the offspring of C57BL6 mice
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BACKGROUND. Autism spectrum disorder (ASD) is a neurodevelopmental disorder with an array of etiological causes, including environmental, genetic, and immunological triggers. High-energy diets activate the immune system during prenatal stages favoring infiltration of peripheral immune cells and cytokines into the brain by the choroid plexus and circumventricular regions and altering microglial activity. Accumulation of immune entities and microglia activation in brain have been reported to disrupt social behavior. However, the interplay between prenatal exposure to high-energy diets, neuroinflammation and defective social behavior has not been reported.
METHODS. Female C57BL6 mice were exposed to cafeteria diet during pregnancy and lactation. The effect of diet on social, locomotor, repetitive stereotyped, and anxiety-like behavior was evaluated in the male offspring two-month-old. We quantified the number of infiltrating natural killer (NK1.1+), dendritic (CD11c+), lymphocytes (CD11b-- -CD45+), macrophages (CD11b+ -CD45high), and M1 (CD11b+ -CD45low -CD86+) or M2 (CD11b+ -CD45low -CD206+) microglia in the choroid plexus and cerebral cortex, hippocampus, and striatum of the male offspring by flow cytometry.
RESULTS. Our results demonstrated that exposure to cafeteria diet during prenatal stage primed defective social interaction and repetitive-stereotyped behaviors in male offspring. Flow cytometry analysis showed lymphocyte infiltration in the cerebral cortex and hippocampus compared to the choroid plexus in the offspring exposed to cafeteria diet. No significant changes were observed in the NK, dendritic or macrophage levels in the choroid plexus and the cerebral cortex, hippocampus, and striatum regions of those subjects. The effect of cafeteria diet exposure also did not affect microglial density or M1/M2 phenotypes.
CONCLUSIONS. Our results indicate that exposure to a cafeteria diet during prenatal development promotes an increase of lymphocytes in brain regions of importance for ASD that could contribute to the behavioral defect in the offspring. Testing the

contribution of lymphocyte infiltrates in the development of ASD-like behaviors could better explain the cellular mechanisms related to the disorder.

Response of obesity-resistant BALB/c mice to a ketogenic diet
Ana Luisa Cantú Ruiz

Introduction.
The ketogenic diet (KD) is a high-fat, low-carbohydrate diet in which the body undergoes metabolic adjustments that stimulate ketogenesis, thereby increasing circulating ketone bodies. Loss of body weight is attributed to these adjustments, as well as neuroprotective properties. However, the mechanisms involved are still not fully elucidated. That aim of this work was to evaluate the effect of a ketogenic diet on body composition, feeding behavior and glucose metabolism in mice of the BALB/c strain, a mouse model resistant to obesity.
Materials and methods.
BALB/c mice of both sexes, 12 weeks old, were divided into KD and control groups, which received a ketogenic diet (Research Diets) or standard chow (LabDiet 5001), respectively, for 23 days. Throughout the experiment, body weight gain, water and food intake were measured, whereas body mass index (BMI), the percentage of interscapular, inguinal, and visceral adipose tissue and blood b-hidroxybutyrate levels were measured at the end of the protocol. In addition, glucose tolerance tests were carried out at the beginning and at the end of the experiment.
Results.
Similar body weight gain (10%) was observed in males and females on KD compared to the control group (pConclusions. In obesity-resistant BALB/c mice, the consumption of a ketogenic diet for a short period induces a state of nutritional ketosis accompanied by weight gain, increased fat tissue, and impaired glucose intolerance.

TATA-box Binding Protein interacts with Antp, Scr, Ubx and AbdB through their N-terminal domains
Ruben Montalvo

Background
Hox proteins are transcriptional factors (TFs) that define segment identity during embryonic development regulating specific target genes. These TFs interact with cofactors for DNA specificity and other TFs to regulate gene expression, which include basal transcriptional machinery members like BIP2, Med19, TFIIEβ, M1BP and TBP. Since TBP glutamine homopeptide (PolyQ) act as an interaction domain involved transcriptional regulation, we analyzed if TBP interact with Antp, Scr, Ubx and AbdB through its PolyQ region.
Methods
We used Bimolecular Fluorescent Complementation (BiFC) to determine TBP interaction with Antp, Scr, Ubx and AbdB as well as the implication of their homeodomain (HD) and the TBP polyQ region. We used expression vectors carrying the sequences of TBP and its PolyQ lacking version (TBPΔQ) fused to the N-terminal half of Venus (VN) and Antp, Scr, Ubx and AbdB as well as their HDs fused to the C-terminal (VC). All VN and VC constructions were co-transfected with pCAGm Cherry in HEK293 cells. Fluorescent cells were quantified and BiFC percentage was calculated as green cells per each 100 red cells. We also used UAS-GAL4 system to direct the expression of VNTBP and VCAntp or AntpHD in *D. melanogaster* embryos using a *Ptc*-GAL4 driver. BiFC fluorescent embryos were acquired by confocal microscopy.
Results
The results showed that TBP interact with Antp (78%), Scr (72%), Ubx (70%) and AbdB (95%) in cell culture. The interaction with HD decreased interaction percentage as follows: AntpHD(50%), ScrHD(44%), UbxHD(41%) and AbdBHD(61%) indicating the implication of the N-terminal in these interactions. Also, the PolyQ deletion in TBP decreased the signal to 41%, 25%, 34% and 49%, respectively, confirming the PolyQ importance in these interactions. The combination of deletions both in TBP and homeoproteins showed an additive effect. Additionally, we corroborrated the TBP-Antp interaction in *D. melanogaster* embryos by BiFC and the Antp N-terminal involvement in this interaction as well.
Conclusions
TBP interaction with Antp, Scr, Ubx and AbdB is mediated by Hox N-terminal regions and the PolyQ domain of TBP as well. Furthermore, TBP-Antp interaction also occurs *in vivo,* suggesting that they could have similar transcriptional regulation during development of *Drosophila melanogaster*.

The impact of social isolation on the Neural Pathways of Dopamine Neurons in the Ventral Tegmental Area (VTA) and the Nucelus Accumbens (NAc): Implications for the treatment of depression, anxiety, and drug addiction.

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As the literature on the Monodelphis domestica continues to grow, it is important to contribute to the knowledge base regarding neural pathways and their role in social behavior in this species. Previous studies have provided evidence that increased activity in ventral tegmental area (VTA) dopamine neurons were associated with more social activity in mice. It is also known that in traditional rodent models, the Nucleus Accumbens (NAcc) is implicated in interaction reward processes like motivation; however, more research is needed to elucidate the role of the NAcc in social behavior of the M. domestica. The present study was designed to address the knowledge gap regarding the brain and social behavior using M. domestica as an animal model. Using immunohistochemistry, we characterized the expression of Tyrosine Hydroxylase (TH), a marker for dopamine neurons, in both the VTA and the NAc of M. domestica and determined that the pattern of TH expression is similar to what is observed in rodents. Next, the expression of TH in opossums that were exposed to a social stimulus were compared to TH levels in animals that were not exposed to a social stimulus, confirming an effect of isolation on TH immunoreactivity. Social stimuli were provided by housing the opossums in groups of 2-3 same-sex partners or by themselves in their cages. Given that Monodelphis is a model for neurodevelopmental research, this study could serve as the first to look at neurotransmitters that are associated with social behavior in an animal model that is not widely studied. A goal of this presentation is to better inform clinicians about the possible biological basis of social isolation and the negative symptoms associated with it. Using the data that was collected, we can begin to understand the biological markers that are implicated in human psychological disorders and find areas to target with different treatment modalities.

The Interplay between O-GlcNAcylation and Phosphorylation in diabetic heart

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Background. Diabetes mellitus prevalence has reached pandemic proportions, and diabetic cardiomyopathy (DC) is a significant and frequently (60%) associated complication. Alteration of myofilament site-specific phosphorylation stoichiometry is evident in experimental and human failing hearts. Another important post-translational modification (PTM) associated with diabetes is O-GlcNAcylation which is linked to glucose metabolism.
Methods. In order to find the missing link between hyperglycemia and abnormal cardiac function in diabetic, we perform global myofilament site-specific O-GlcNAcylation and Phosphorylation mapping and quantification in normal and T2D hearts. This data was generated for 3 wild type and 3 diabetic heart challenged with force-frequency response, and one wild type and one diabetic heart challenged with isoproterenol. We studied the mature male ob/ob mice (age 3-4 months) as a model for type 2 diabetes, with age-matched C57BL/6J mice as controls. Myofilament proteins were isolated and protein concentration were determined by the Lowry assay and equal amount of proteins (~200 µg) were reduced with 5 mM DTT, alkylated with 15 mM iodoacetamide, and digested by trypsin (trypsin/protein ratio = 1/50). Tryptic peptides were labeled for quantitation with TMT 10plex labels following the manufactures guidelines. The labeled peptides were combined and fractioned offline using XBridge HPLC column. Resulting 96 fractions were combined into 24 fractions for LC-MS/MS runs, while only reserving 10% for the protein abundance analysis, and combining the remaining 45% for BEMAD for O-GlcNAc peptide enrichment and the other 45% for TiO2 enrichment for Phosphorylation.
Results. we present the result of our investigation in the interplay between O-GlcNAcylation and phosphorylation in the diabetic cardiomyopathy. Our results show that there is significantly high correlation between the fold change of phosphorylation and O-GlcNAcylation of the same residue in the protein, and among proteins in the same biological pathways. We also investigate whether the proximity on the protein sequence has any effect on the correlation between phosphorylation and O- GlcNAcylation of two intra-protein residues.
Conclusion. There is an interplay between O- GlcNAcylation and phosphorylation among the proteins in the same biological pathways. Also, our result suggests that the closely positioned intra-protein residues have higher correlation between the phosphorylation and O-GlcNAcylation.

Years of Education and Total Intracranial Volume: A Longitudinal Study
Okechukwu Erinne

Background: Education is one of the factors that contribute to a higher brain reserve. Based on the brain reserve hypothesis, the greater the brain reserve, the less likely it is to develop a neurocognitive disorder, such as dementia.
Methods: Data for this study were obtained from the Open Access Series of Imaging Studies (OASIS) longitudinal magnetic resonance imaging (MRI) data in nondemented and demented adults. There was a total of 150 right-handed participants and 373 imaging sessions, with an average duration of 719 days between visits. The primary outcome was estimated total intracranial volume (eTIV). Multivariable longitudinal regression was used to determine the relationship between years of education and eTIV, while adjusting for age, gender, and socioeconomic status.
Results: We found a significant association between years of education and eTIV. For every additional year of education, there was an increase in eTIV by an average of 14.1 cm^3 (Mean difference [MD]: 14.09, 95%CI: 4.44–23.74). However, after adjusting for age, gender, and socioeconomic status, there was no association between years of education and eTIV (MD: 6.23, 95%CI: -5.60 – -18.06). The association between years of education and eTIV was found to be modified by gender (MD: -25.30, 95%CI: -44.85 – -5.75).
Conclusion: This longitudinal study showed a crude relationship between years of education and eTIV which reinforces the brain reserve hypothesis. This study further emphasizes the need for more intense dementia prevention measures for less educated individuals.

Medical Student Category

A case of osteogenesis imperfecta in a patient presenting with recurrent seizures
Khalid Sheikh

Background: Osteogenesis imperfecta (OI) is an extremely rare inherited connective tissue disorder. A thorough history and identification of pathologic fractures is essential for appropriate diagnosis.
Case Presentation: A 21 year old male with a BMI of 34 and a lifetime history of over 10 fractures presented to the Emergency department after a complex seizure at home. The seizure was witnessed by his mother and lasted less than one minute. He had another seizure two weeks prior to presentation. In the ED, the patient had another witnessed seizure lasting 45 seconds with bladder incontinence. He has one cousin with epilepsy. EEG and MRI Brain were unremarkable. CT of the upper extremities showed displaced fracture of the left humeral head, displaced fracture of the right anterior humeral head, and fracture of the posterior rim of the right glenoid fossa. His seizures were controlled on levetiracetam. The patient's mother detailed a life-long history of fractures with minimal trauma, including breaking his R leg after hitting a sofa at age 5, breaking a knee while playing football at age 14, and breaking a thumb while playing catch at age 18. Upon follow-up with an Endocrinologist, the patient was diagnosed with osteogenesis imperfecta
Conclusions:
Identifying pathologic fractures and taking a thorough history is essential for timely andappropriate diagnosis of OI. OI can be complicated by the comorbidities including epilepsy andobesity. Appropriately addressing these comorbidities can decrease future risk of fracture.

Adverse Childhood Experiences and Resilience in Medical School Students: A Scope of Medical Literature
Andrea Soto Abarca

Background: Adverse childhood experiences (ACEs) represent types of childhood trauma that are associated with long-term negative effects on health and wellbeing. An elevated number of ACEs can lead to depression, suicidality, alcoholism, and substance use. Factors that can protect a person from increased health risks include resilience, which is broadly defined as the ability to bounce back from adversity. Few studies have analyzed the exposure of ACEs in medical students, however, there is extensive literature on how low levels of resilience are linked to higher rates of depression, fatigue, and burnout among medical students. Little is known

about the relationship of ACEs and resilience measured by the Connor-Davidson Resilience Scale (CD-RISC) across all four-year classes of medical students in the United States. The objective of this scope review is to explore and synthesize the existing research that analyzes the effects of ACEs and resilience by utilizing the CD-RISC in medical students.
Methods: In this scope review, we searched three electronic databases for studies reporting on ACEs exposure and resilience with the CD-RISC on medical students. We were particularly interested to see if any of these studies had any associations of ACE and CD-RISC scores on academic performance of medical students. Cross-sectional studies that evaluated ACEs and/or the CD-RISC amongst medical students were included for analysis.
Results: This study included 4 studies that examined the exposure of ACEs on medical students and 16 studies that examined CD-RISC scores in medical students. The mean CD-RISC score for medical students was generally below the mean for the general population in the U.S. There has not been any research performed with the CD-RISC 25-item scale on medical students based in the U.S. Additionally, there has not been any studies with the CD-RISC 10-item scale that includes all four-year classes of medical students in a U.S. institution.
Conclusion: Resilience and ACEs are important factors that impact the health of medical students. The findings of this review indicate ACEs can have negative health outcomes, such as depression and suicidal ideation. With medical students already being at an increased risk for mental illnesses and burnout, ACE exposure and low levels of resilience may negatively affect academic achievement. Therefore, additional studies using the ACEs survey and the CD-RISC are needed to further examine their relationship to academic performance in medical students.

Analysis of Primary and Secondary Ewing Sarcoma Outcomes
Andrew Kolodziej

Background: Ewing Sarcoma (EWS) is a rare cancer of bone and soft tissue that predominately occurs in adolescents and young adults. EWS is often associated with a second malignancy, which can occur before or after the EWS diagnosis. EWS occurring after a prior malignancy is less common and understudied. We aimed to determine whether clinical presentations and long-term survival were different between primary and secondary EWS.
Method: Patients diagnosed with EWS and confirmed by the EWSR-FLI1 fusion transcript by pathology reports at MD Anderson were analyzed by a retrospective chart review. Patients with a Peripheral Neuro-Ectodermal Tumor (PNET) diagnosis were not included in our cohort. Overall survival was determined by Kaplan-Meier methods and calculated using the log-rank test. Differences in average survival were calculated with two-sample t tests.
Results: Twenty-two cases of secondary EWS were reported, accounting for 47.8% of all EWS cases. Patients with secondary EWS were diagnosed with EWS at an older age than patients with primary EWS (47.9 years vs 30.6 years, p = 0.004). Patients with secondary EWS had a significantly lower five-year survival rate (16.7% vs 62.2%, p
Conclusion: Secondary EWS patients are diagnosed with EWS at an older age, have poorer long-term survival, take more time to develop a future malignancy, and respond worse to radiation therapy than primary EWS patients. These findings indicate that secondary EWS patients are distinct from primary EWS patients and possibly have a unique germline mutation predisposing them to EWS.

Antigen staining for detection of MUC13 and MUC16 expression in carcinoma tissue
Jose Benitez

MUC13 and MUC16 are epithelial expressed proteins implicated in various carcinomas. Over expression of these biomarkers appear to play a role in tumor growth; this discovery has paved a road for multiple studies discussing the potential of targeting mucin proteins and optimize immunotherapy approaches against carcinomas. Our research serves to investigate the level of expression of MUC13 and MUC16 in cancerous and normal tissue and to discuss the implications our findings may have for the utilization of these biomarkers for cancer therapy.

Association of Cutaneous Manifestations with Admission Duration Among Dengue Fever Patients in Rural, Underserved Philippines

Patricia Guzman

Background: Dengue fever (DF) is endemic to the Philippines, where it poses a major public health concern, especially in rural and medically underserved areas. Recent literature has underscored the clinical significance of rash in DF, reporting that cases with rash are associated with less severe complications than cases without. The aim of this study is to determine whether the presence of dermatological symptoms is associated with a shorter admission duration among DF patients in a rural, underserved area in the Philippines. This association may in turn aid in the management and triaging of DF cases, particularly in underserved areas with limited resources and high patient burden.
Methods: Fifty patients with a final diagnosis of dengue fever at Milagros Albano District Hospital, Cabagan, Isabela were identified for retrospective analysis. Admission duration for all patients was compiled and analyzed. Chart review was conducted to determine the presence of concomitant dermatological symptoms. A t-test was performed to determine whether the difference in mean admission duration was significant between DF patients with dermatological symptoms (n=4) and those without (n=46).
Results: The difference in mean admission duration for patients with cutaneous findings compared to those without was not significant (3 *vs* 4.19 days, respectively; p=0.29). An incidental finding was the lack of dermatologic manifestations within the cohort at large. Among the cases identified, only four of the fifty patients were found to have dermatologic manifestations (8%), all of which were described as rashes and petechiae.
Conclusions: The results do not support an association between shorter admission duration and the presence of dermatologic manifestations among DF patients. The relative absence of dermatologic manifestations within the cohort is also a noteworthy finding in itself. Previous studies have reported that cutaneous manifestations are seen in 65% of DF patients, which stands in contrast to the 8% seen within this study. This finding suggests that a future topic of interest is the relationship between the lack of cutaneous manifestations and the clinical and demographic characteristics of the cohort. Ultimately, further exploration of cutaneous manifestations as a tool in the management of DF cases is warranted.

Balancing Autonomy and Safety in the Care of a Senior Patient: To Place or Not to Place?

Jessica Flores

According to the Census Bureau, the United States will have more than 20% of its population above age 65 by 2030, bringing ethical dilemmas in balancing risk and autonomy in geriatric patients to the forefront. Many geriatric persons rely on social support to fulfill their safety and autonomy needs, but those who lack a network are faced with increased challenges.
An 80-year-old male with a history of multiple comorbidities presents to the UTRGV-DHR internal medicine outpatient clinic. His medical history includes coronary artery disease, heart failure, atrial fibrillation, chronic kidney disease, basal cell carcinoma of the nose, gout, tobacco abuse and vision impairment. This patient presented for follow up and denied any medical complaints but reported difficulties with tasks of daily living. Due to his vision impairment, he cannot see his food or read his medication labels. However, he still drives himself to appointments. The patient has no social support except for home health services through Medicare that fill pillboxes with his daily medications. During his visit the patient mentioned he had not had a home health visit recently; he was concerned that he might make a mistake taking the medications on his own. The patient insists that living in a nursing home or anything similar would be “worse than being in jail.” He has competency and capacity to make his own decisions and therefore his physicians pursued options to support him at home.
This case demonstrates the importance of respecting desired autonomy while simultaneously working to preserve safety and mitigate risk. Providers must balance autonomy with safety including in geriatric patients. All choices in life involve risk. Discussion of patient’s desired risk tolerance in order to preserve which aspects of freedom is key to meaningful shared decision making in the elderly.

Changes in Severity of Pelvic Floor Dysfunction after Hip Surgery

Sonia Wadekar, Amisha Mehta, Joel Wells, Taylor Price, Donald Kasitinon

Introduction: Despite growing evidence that suggests an association between hip pathology and pelvic floor disorder (PFD), the comprehensive effects of hip surgery on PFD symptoms are not well understood. The primary purpose of this study was to report the role of surgical hip procedures on the severity of PFD symptoms.

Methods: A prospective database of demographic and outcome data for all female patients that were operated on between 2019-2020 at a single institution was queried. The PDFI-20 was used to assess symptom severity, and cases with both pre and postoperative surveys were included (n=62). MCID was used to determine significance of change in PDFI-20 score.

Results: All patients were female and mean age was 50.1 years. 40 patients had a THA, 10 had a PAO, 9 had a hip arthroscopy, 2 had a surgical hip dislocation, and one had abductor repair and reconstruction. The pre- and postoperative PFDI-20 scores for patients who underwent THA were 40.4±40.1 and 31.5±35.8. The pre- and post-operative PFDI-20 scores for patients who underwent PAO were 10.6±16.9 and 5.3±12.4. The pre- and post-operative PFDI-20 scores for patients who underwent hip arthroscopy were 7.2±12 and 15.2±25.9. The pre- and post-operative PFDI-20 scores for patients who underwent surgical hip dislocation were 41.7±58.9 and 39.1±55.2. The pre- and post-operative PFDI-20 scores for patients who underwent abductor repair and reconstruction were 33.3±0 and 113.5±0.

Conclusion: A subset of patients undergoing hip surgery do have baseline pelvic floor dysfunction. We did not find a significant improvement from pre and post op in our patient population. Mean PFDI-20 scores improved in patients who underwent THA, PAO, and surgical hip dislocation. This study demonstrates that the impact of hip surgery on PFD symptoms in patients with hip pathology should be considered, with further research required to fully characterize this relationship.

Characterization of prostate cancer in transgender women

Simita Gaglani

Background

The risk of developing prostate cancer (PC) in transgender women is unknown. Many patients are unaware that the prostate is not removed during male-to-female surgical transition. It is unclear what the exposure of estrogens and androgen blockers in these transgender patients has on the prostate. Our aim was to examine and characterize the different presentations of PC in published cases and augment this with an additional case series from one institute.

Materials and Methods

A retrospective review of prospectively maintained medical records was performed identifying features of PC diagnoses in transgender women. These included age, duration of feminizing hormone therapy, PSA values at time of diagnosis, Gleason grade, and M stage. These were compared with a series of published cases of PC in transgender women, compiled after a systematic literature review using PubMed to review all literature in the English language reporting a case of prostate cancer in a transgender woman, published between January 1st, 1971 and December 31st, 2021. The review was conducted in accordance with PRISMA guidelines. The keywords used included “prostate cancer,” “transgender,” “transsexual,” “trans,” “male-to-female,” “Gleason score,” and “prostatectomy.”

Results

We identified thirteen cases of PC in transgender women; eleven from published cases from 1975-2021 and two from our database. Several differences were identified between the published cases from the last 50 years and the two from our contemporary database: The average age in each group was 64 and 56, average duration on therapy was 22 years and 5.5 years, PSA values were 61.54 ng/dL and 1.4 ng/dL, and median Gleason grades were 8 and 6, respectively. Of the 9 published cases which discussed metastases, 6 (67%) had metastatic disease on presentation compared to 0% in the contemporary cohort.

Conclusions

There is a paucity of data describing the risk of prostate cancer in transgender women. The current published data available to inform clinical practice is predominantly comprised of case reports, many of which are dated. Historically, patients present with advanced disease when compared to their recent counterparts, which may be explained by a variety of biopsychosocial factors. There is a need for contemporary data to inform and formalize standards for screening, diagnosis, and treatment within this group.

CMS Sepsis Bundle Compliance Analysis at The Time of Patient Admission During The COVID-19 Pandemic in a Community Hospital in South Texas.

Daniel Habenicht, Jose Ramos, Carlos Ramos

Background: Sepsis remains an important cause of mortality in hospitals across the globe, estimating up to 32 million cases and 5.4 million deaths per year (1). In the United States, the Centers for Medicare and Medicaid Services (CMS) have made increasing efforts to lower the mortality rate in sepsis patients. In October 2015, the CMS implemented a quality process measure requiring Medicare affiliated hospitals to report their compliance with the sepsis bundle at 3, and 6 hours within time of presentation for patients with severe sepsis or septic shock (2).

Materials and Methods: A retrospective chart review was conducted to analyze the adherence to the CMS sepsis bundle. Additionally, patient outcomes including mortality, hospital days, admitting level of care and COVID-19 status were obtained. The quality improvement department at our institution, released 146 records based on age (18-65yo), date and International Classification of Diseases (ICD) codes of severe sepsis and septic shock. A total of 101 charts met the inclusion criteria in this analysis. Charts were included if there was documentation from a medical provider (Physician, PA, NP) of severe sepsis or septic shock. However, the main parameter of inclusion was if the patients met CMS-specified criteria for severe sepsis or septic shock.
Results: From the 101 charts reviewed, 61.38% of the patients were not treated according to the CMS Sepsis guidelines during the period of April to August 2020. In other words, there was a CMS sepsis bundle compliance rate of 38.62% for the same period. The most commonly missed intervention was the administration of IVF for patients with lactate >4 mmol/L or hypotension. The second most commonly missed item was obtaining repeat lactate levels for patients with initial lactate >2mmol/L.COVID-19 status was then taken into consideration for both groups. Patients treated optimally, who were COVID-19 positive had a mortality rate of 70.60% compared to those who were COVID-19 negative and were treated optimally, had a mortality rate of 36.40% (P = 0.034) Figure 1. For the sub-optimally treated group, the mortality rate for the COVID-19 positive arm was 88.20% compared to those who were COVID-19 negative with a mortality rate of 48.90% (P = 0.0048) Figure 2. Patients treated inadequately who were COVID-19 positive were then compared with patients inadequately treated who were COVID-19 negative (p = 0.001) Figure 3. Though not significant, there was a trend when comparing those who missed 2 or more components of the 3hr sepsis bundle compared to those who received the full bundle (p = 0.073)Values that were found to be insignificant but were calculated include the following: The mortality rate for patients treated optimally vs those who were treated sub-optimally was 48.7% and 58% respectively (P = 0.28). Comparing COVID-19 positive patients who were adequately vs inadequately treated (p = 0.203). Conversely COVID-19 negative patients adequately vs inadequately treated (p = 0.333).
Conclusions: CMS sepsis bundle compliance rate is lower than previously recorded during the COVID-19 pandemic. The CMS sepsis protocol had no significant impact on mortality rates compared to patients who did not follow the CMS protocol. COVID-19 positive individuals had a significantly higher likelihood of mortality. Other studies have also found that sepsis protocols did not lead to decreased mortality rates. Perhaps the CMS sepsis bundle is not a reliable tool for best practice of treating patients with sepsis.

Comparing Stroke Symptom Recognition and Intervention Times in the Rio Grande Valley
Joshua Ninan Kelsey Baker

Background: According to the American Association of Neurological Surgeons, a cerebral infarction or a cerebrovascular accident (CVA), commonly referred to as a stroke, is a result of abrupt interruption of blood flow to the brain1. This may occur due to a blockage in the blood vessels supplying the brain, which is termed an ischemic stroke (IS), or due to a rupture in the blood vessels that supply the brain causing blood loss, which is called a hemorrhagic stroke (HS). Another process commonly reported by stroke patients is a Transient Ischemic Attack (TIA), which is considered to be an ischemic stroke that presents momentarily with neurological symptoms before resolving spontaneously. The neurological symptoms presented by patients undergoing a stroke may include headache, nausea, vomiting, dizziness, disorientation, confusion, memory lapses, speech or vision impediments, unilateral numbness or weakness to face or extremities.
Methods: This study will be a retrospective chart review that will include medical information of patients presenting with stroke-like symptoms from June 1997 to present date. The following information will be collected from the medical charts using ICD-9 and ICD-10 codes: demographic information, socioeconomic factors, time of stroke onset, triage notes, admission times, pre-operative notes, neuroimaging scans, past medical history and current medical history, motor and functional test findings, and medication lists. Most of the data associated with the study will be electronic data which will be identified via patient MRNs. This information will be securely stored on a RedCap server that is password protected behind a VLAN 573and managed by UTRGV Computing Services. The identifiable information will then be linked to a de-identified code which will be used to perform all data retrieval procedures. Correlational and regression analysis will be performed on the data to analyze factors which may be associated with the duration of stroke-like symptom onset and presentation to the medical facility.

Connectome Specific Harmonic Wave Analysis of disordered brain states
Stephen Odunsi, Ihsan Salloum

Background: Connectome Harmonics analysis is a novel neuroimaging framework that defines brain states as neural spatial patterns associated with different frequencies emerging within a brain. Frequencies corresponding to specific brain states, or connectome-specific harmonic waves (CSHWs), are estimated to be the building blocks of brain activity, linking cortical oscillations, functional

connectivity, and structural connectivity. Using this framework, studies will examine CSHWs of patients to catalog and analyze the spatiotemporal neural dynamics of patients with disordered brain states.
Methods: By using MRI (or fMRI) and DTI data extracted from MRI scans of patients, cortical surface anatomy and the underlying neural tracts can be tracked respectively and combined to generate a patient's connectome. Once the connectome is generated, it is converted into its graphical form where Eigen decompositions of the Laplacian operator are graphed. Application of this function to the connectome's graph results in a spectrum of harmonic brain modes corresponding to a patient's brain's natural resonant frequencies (eigenvalues).
Results: The CSHW framework has already been used to examine brains in a variety of ways. Previous research findings show that neocortical organization and development may be shaped by the harmonic modes corresponding to the brain's functional connectivity, Patients given classical psychedelics (LSD, Psilocybin, and DMT) display an expanded repertoire of brain states, and neuroplasticity may be underpinned by neurons shifting into metastable states that are modulated according to a brain's CSHWs.
Discussion: Common neuroimaging methods like CT scans and PET scans are important in extracting information about regional activation during tasks but fail to contextualize or explain the interconnectedness of brain activity. CSHW analysis utilizes multiple imaging techniques and mathematical functions to derive an alphabet of brain states that can be used to describe our subjective states, from mental disorders to flow states and everyday emotions. Clinical trials here at the UTRGV institute of neuroscience will apply CSHW analysis to patients suffering from bipolar disorder, depression, and alcohol withdrawal syndrome. This research will not only allow us to examine and catalog the spatiotemporal dynamics of these disorders but potentially map out treatment plans tailored to each patient's connectome harmonics.

COVID-19's Impact on Medical Students' Well-being and Residency Choices
Jessy Feng, Sabrina Orta

Background: COVID-19 has impacted medical education in many ways including altering in-person rotations, limiting research opportunities, and introducing additional financial strain for medical students. With these unprecedented changes, we were interested in examining the impact of COVID-19 on medical students' well-being and choices surrounding their upcoming resident medical education.
Methods: An online questionnaire was written and distributed via Qualtrics to 4th year medical students across Texas from May to December 2020. The inclusion criteria were MD or DO U.S. medical students planning to apply to residency in the 2020-2021 cycle.
Results: A majority of participants (78.05%) identified as a minority in medicine due to race/ethnicity, gender, sexual orientation, first-generation or low-socioeconomic status. Prior to COVID-19, 26.19% planned to submit 0-39 applications, 47.62% to submit 40-79 applications, and 26.19% to submit 80-119 applications. During COVID-19, 82.5% of participants increased their number of planned residency application submissions with the highest being 160-199 applications. Regarding the increase, participants cited reasons such as limited opportunities to complete away rotations, secure letters of recommendation, conduct research, mentorship, and financial hardships. Before the pandemic, 17.07% felt strongly concerned about matching into their specialty of choice. This nearly doubled to 33.33% during the pandemic. Based on student responses, it shows that COVID-19 also affected their well-being in terms of access to food, physical health, mental health, family, finances, as well as use of alcohol, tobacco, and illicit drugs.
Conclusion: This survey allowed medical students to express how the COVID-19 pandemic affected their overall well-being and altered their behaviors for the 2020-2021 residency application cycle. The increased number of residency applications seems to align with multiple underlying stressors from the medical student applicants. Given that a majority of the survey participants are minorities in medicine, we are unable to determine if the level of impact is unique to this group. We predict that the impact of COVID-19 on minority students in Texas may demonstrate significant differences in key areas that affect student well-being both at home and at school. These results show several areas of opportunity for medical schools to increase support for students during significantly stressful events during their medical training.

DEVELOPING A TOOL USED FOR ASSESSING SUNSCREEN UTILIZATION AND SUN EXPOSURE
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Introduction: Skin cancer incidence has increased within the last 40 years. It accounts to 1 in 3 cancer diagnoses worldwide. (1) Sunscreen serves as a protective barrier against the harmful effects of sun exposure such as skin cancer. (2) Despite the advantages

of using sunscreen, studies suggest that it is being under-utilized. (3) The preliminary goal of this research is to develop, validate and standardize a questionnaire to assesses the sunscreen utilization of adolescents and adults in both Mexico and the United States along the Rio Grande Valley
Methods A questionnaire in both English and Spanish has been developed to assess sunscreen utilization and sun exposure of the surveyees. We will perform face validity, reliability with test-retest approach, internal consistence with alpha Cronbach, intraclass correlation in clusters (i.e.: family, schools or clinics), sensitivity to detect contrasts The results of the survey will be analyzed using a 2k factorial design.
Expected results: Using the 2k factorial design, we aim to assess the differences of sunscreen use amongst the following groups: Male versus female surveyees, adolescent versus adult surveyees and people residing in the United States versus residing in Mexico. The obtained statistics will help to calculate sample sizes in future studies.
Future endeavors: Intervening with adolescents who do not utilize sunscreen well is something we look forward to partaking in: both locally and through policy change. After obtaining preliminary data with the questionnaire, we plan to do further studies regarding the relationship between circulating vitamin D levels, sun exposure, and sunscreen usage.

Exploration of factors in faith and their association with depression and anxiety during the COVID-19 pandemic
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Background: Depression and anxiety are two of the most common mental health conditions afflicting a wide range of populations. They have been found to cause not only mental distress but also lead to poorer health outcomes. Research has sought to find the causes and risk factors regarding these conditions to better prevent their development and treat them adequately. Religions and faith, measured in various forms have been shown to both attenuate or exaggerate these effects. This research seeks to identify how self-reported faith was shown to be associated with the development and severity of depression and anxiety during the early months of the pandemic.
Methods: Using the COVID-19 Impact on Health and Well-being Survey (IHWS) created by members of UTRGV. Validated instruments (FAITH scale, PHQ9 and GAD7) were used to construct faith factors and depression and anxiety measures. Descriptive statistics were created for all covariates and stratified by faith favors. Chi-square analysis was performed to examine the association between all covariates and faith factors. A final model using binary logistic regression explored how the self-reported faith factors were associated with anxiety and depression adjusted for all other covariates. An alpha of 0.05 was used to determine significance unless otherwise noted. SAS 9.4 was used to perform all analysis.
Results: The majority of respondents were female (n=485, 78.6%), Hispanic (n=349, 56.0%), and college graduates (n=472, 75.9%). Overall, the proportion of moderate to severe depression and anxiety 9.6% and 19.2% respectively. Faith Factors (self-reported faith intensity, service attendance and weekly hours of prayer/meditation) were not associated with depression. Service attendance was associated with reduced anxiety in adjusted and unadjusted analysis. The odds of moderate to severe anxiety was 103% higher (OR=2.02 95% CI 1.12 = 3.70) for those who attended services monthly or less versus those who attended weekly or more.
Discussion: Prior research has shown that positive faith and religious experiences generally attenuate depression and anxiety. This research found during the pandemic positive faith expression, service attendance and weekly prayer and meditation didn't attenuate depression, but weekly or more service attendance did reduce moderate to severe anxiety.

Frequency of ICU Specific Interventions After Middle Meningeal Artery Embolization
Niti Dharwadkar

Middle meningeal artery embolization (MMAE) is increasingly performed for the treatment of chronic subdural hematomas. Some authors have described managing minimally symptomatic patients with MMAE in the outpatient setting.
Objective of this research is to analyze the frequency of ICU level interventions after MMAE in the neuro-intensive care unit. A consecutive series of MMA embolizations for cSDH were retrospectively reviewed. Frequency of ICU specific interventions such as need for post procedural mechanical ventilation, need for intravenous vasopressor or antihypertensive medications was recorded. 34% patients did not receive any sort of ICU level intervention at all. Among the remaining who did, 32% required mechanical ventilation post procedurally. 14% needed a vasopressor and 48% required intravenous antihypertensives to maintain systolic blood pressure within goal parameters. 34% of patients who underwent MMAE did not require any ICU level interventions afterwards. The

most common reason for an ICU intervention after MMAE was for correction of blood pressure to maintain within specified goal. Further investigation is warranted but it suggests that liberalizing blood pressure parameters could reduce the need for ICU utilization after MMAE.

Bridging the Gap Between Animal Behavior Research and the Study of Human Personality and Psychopathology
William Reckley

Most psychopathology focuses on the current mental picture of an individual with some including relations to past experience. One problem with the biomedical studies of psychopathologies is the difficulty in using animals to describe and model these mental states in humans. This difficult task has been confounded by the inability to classify animals in a way that will provide general models that will allow better translation to hypotheses in humans. Therefore, the present investigation explores statistical/research strategies to organize variables using lab animals to facilitate the translation of this information to humans.
The major goal of this research is to systemically observe different variables and draw parallels to theories of human personalities. The idea is to begin to classify animal samples by a currently rudimentary version of personality, with the goal to model addictions in a more holistic way that encompasses more of who the individual is rather than just the effect of the drug. This research will establish the groundwork for modeling different psychopathologies in similar ways to not only look back from past to current but to help model and predict future behaviors based on the distinction between animal traits and psychopathologies. Ultimately the goal is to describe a better model within animals that can translate to humans in the context of psychopathology.
The research up to this point shows that basic trials have been conducted and looked at a single axis in terms of personality but there has been no real comprehensive design that can be used. Furthermore, the data on single personality traits shows certain traits can predict certain outcomes reliably similar to what we expect in human persons. This indicates that by using factor analysis on an array of different traits, using the typical big five model as a starting point, a set of traits that can correctly model personality in animals can be achieved.

From Dream to Reality: Conducting a Thorough Physical Exam With a Cell Phone
Noel Garza

Background: The COVID-19 pandemic has prompted a surge in the utilization of telemedicine as physicians and patients attempt to protect themselves. The art of medicine is rooted in the ability to gather subjective and objective data from patients to make accurate diagnoses and recommendations. We must rely on creativity and innovation to gather this information in the new setting of telehealth in a manner with high consistency and reliability to maintain high-quality patient care.
Case Presentation: After gathering a thorough history, we work with the patient's guardian to systematically view the patient head to toe, perform cardiopulmonary auscultation, and assess exercise tolerance through a functional examination. This method of physical examination allows for teaching to be easily integrated as both attending physician and student are viewing and listening to the same thing at the same time. Just as importantly, this method of examination strengthens the doctor-patient relationship by creating a working partnership with parent and child to gather the information needed for a successful and reliable physical examination. The lack of training physicians have in performing a virtual physical examination is a concern. There is often a perceived barrier to what can be examined virtually, creating a potential disservice to the patient. Here, we present how mobile communication devices (i.e. cellular phones) can act as the sole peripheral device necessary to conduct a thorough history and physical examination as most of these devices now come equipped with a high-quality camera, microphone, and bright light allowing for a general head-to-toe visualization of the patient and auscultation.
Conclusion: Technology will continually advance and become more accessible, but what is currently widely available for both the patient and clinician is the mobile communication device. Optimization of the use of technology that is currently available needs to be prioritized. We must also take advantage of the great opportunity we have been presented with to create unique partnerships between physician, guardian, and child that make them a part of their healthcare. These unique working relationships and the opportunity for improved medical teaching are drivers for high-quality healthcare.

Giardia lamblia Reactive Arthritis Mimicking Acute Periprosthetic Knee Infection: A Case Report
Rachael Turner

Background:

The difficulty in diagnosing Periprosthetic joint infection (PJI) is exacerbated by the more varied presentation of PJI and the lower synovial fluid WBC count thresholds applied when a prosthesis is present. Multiple reports have described pseudosepsis after total knee arthroplasty (TKA) due to gout or pseudogout. Further confusing the picture, periprosthetic infection also frequently coexists with crystalline arthropathy. Our review of the literature revealed no reports describing reactive arthritis (ReA) mimicking acute infection in the setting of previous TKA. In this case report, we describe a pseudo-periprosthetic infection of a well-functioning TKA secondary to ReA in the setting of *Giardia lamblia* gastroenteritis.

Case:

A healthy 49-year-old man with a well-functioning total knee replacement developed a painful swollen knee. The erythrocyte sedimentation rate was 12 mm/hour, and C-reactive protein was 20.3 mg/L. Aspiration revealed 24,440 white blood cells and 5% neutrophils. His 2018 International Consensus Meeting (ICM) definition score of 5 met criteria for "possibly infected." He was diagnosed with ReA secondary to *Giardia lamblia*, mimicking acute periprosthetic infection. He was successfully treated with a 10-week course of multiple oral antiparasitic medications.

Conclusion:

Systemic parasitic infectious ReA can mimic acute infection in the presence of total knee arthroplasty. Careful application of the 2018 ICM criteria can be critical for workup and the treatment of suspected periprosthetic infection.

Implementation of an Immediate Postpartum Long-Acting Reversible Contraception Program in a Southern Texas Border Population

Samantha Alvarado, Dawn Jensen, Molly Chapman

Background: Expanding contraceptive access in a Southern Texas border population can reduce the number of unintended and short-interval pregnancies, which have been associated with poor maternal and neonatal health outcomes. Healthcare encounters can be maximized to include immediate postpartum long-acting reversible contraception (IPP LARC) as an additive to the healthcare access many women have during pregnancy. The implementation of the IPP LARC Program allowed for the provision of accessible LARCs to fulfill the contraceptive needs of our patient population. This program was supported by Medicaid reimbursements and a private teaching grant that was awarded to the University of Texas Rio Grande Valley (UTRGV) Ob/Gyn residency program at Doctors Hospital at Renaissance (DHR).

Methods: Data was collected retrospectively from participants who received a LARC from 2/2017 to 7/2021 at DHR Women's Hospital after receiving IRB approval. Patient demographic information, such as age, gravidity, parity, delivery route, primary provider, and funding were assessed, along with LARC distribution and insertion timing. The reimbursement status for Medicaid-funded devices was obtained from the DHR Billing Department.

Results: A total of 467 LARCs were inserted under the IPP LARC Program over 4.5 years. Ages ranged from 13-57 years old. A total of 353 (76%) participants received primary care from the UTRGV Ob/Gyn Residency Program. All others were consults who had received care from private physicians at the DHR WH. A total of 314 (67.2%) implants and 153 (32.8%) IUDs were inserted and 313 (75%) devices were placed following a vaginal delivery, while 103 (25%) after a cesarean section. Majority (257 participants (55.2%)) lacked funding, while 193 (41.4%) had Medicaid, and 16 (3.4%) had private insurance.

Conclusion: The IPP LARC program provided for 467 participants, with majority of the recipients requesting immediate postpartum contraception. Most lacked adequate funding and many requests came from private providers wanting to provide patients with their desired postpartum contraceptive method. The program helped fulfill the contraceptive needs of this population by expanding access regardless of funding status. Follow-up studies should assess patient satisfaction and LARC continuation rates to help obtain future funding and promote expansion of the program.

Influence of Age, Race, and Ethnicity on Pre-Hospital Stroke Time Intervals in the Rio Grande Valley.

Elio Garcia Sosa

A stroke occurs when a blood vessel that supplies oxygen and nutrients to the brain is either ruptured (hemorrhagic stroke)or occluded (ischemic stroke).This leads to the death of braincells.1 An additional type of stroke is a transient ischemic attack (TIA).It is also referred as a "small" or "mini stroke" caused by a temporary blockage of blood supply to the brain.

Medical Students Preventing Medical Errors: A Student-Led Approach to Patient Safety in Preclinical Curriculum

Aishwarya Gatiganti, Niti Dharwadkar, Daniel Habenicht

Preventable medical errors are currently the third leading cause of death in the United States following heart disease and cancer (1). Early exposure to patient safety knowledge may lead to students to deliver safer care in their clerkship and residency years. This study was designed to assess the change in knowledge from earlier exposure and education during pre-clinical years and its impact on interest and knowledge about patient safety.

Medical Treatment Options for Cannabis Use Disorder: A Narrative Review
Chase Watson

Background: Cannabis use disorder (CUD) is a common and growing condition in the United States and across the world. With the alteration of the legal landscape of the substance, normalization of the substance's use in society, and a continual increase in frequency in recent years, more treatment options are desperately needed. CUD has in been shown to be associated with various symptoms of mental illness. Most therapies to date have been psychotherapeutic in nature, involving theories such as cognitive-behavioral motivational-based methods. However, these are not always the most effective or accessible options for patients.
Methods: Articles for this review were obtained by searching PubMed, Google Scholar, and the Cochrane Review database for key terms. All the studies included were human studies. Most of the included studies were randomized control trials (RCTs). Trials were prioritized for inclusion based on methodology, date, and outcome-based measures. Only papers after 2010 were considered for inclusion.
Results: In recent years, many pharmacological agents have been studied, including antidepressants, mood stabilizers, GABA agents, THC-like compounds, and even some new novel agents such as N-Acetyl Cysteine (NAC), ketamine, and fatty acid amid hydrolase (FAAH) inhibitors. Of these drugs, research has found some more effective than others such as particular mood stabilizers, GABA agents, as well as THC agonists, and antagonists. Newer drugs like ketamine, a FAAH inhibitor, and NAC have also been shown to be potential treatment candidates. Studies suggest other effective options may involve neuromodulation, as interventions such as transcranial magnetic stimulation (TMS) and transcranial direct-current stimulation (tDCS) have been shown to be relatively successful when targeting specific brain regions.
Conclusions: While there is exciting research so far, much work has to be done before there will be FDA-approved treatments on the market. Thus, we must work together to approach treatment in a multifactorial manner and prioritize the research of potential treatment options with more reliable and consistent evidence of safety and efficacy for CUD.

Navigating The Healthcare System to Increase Quality of Life in the Geriatric Population: Case of an 80-year old Male with Blindness
Endari, K., Flores, J., Aragón, D., Chang, C.
UTRGV SOM

Bilateral retinal artery occlusion (BRAO) is defined as the blockage of blood to the retina in both eyes and can lead to partial or permanent loss of eyesight. This uncommon diagnosis can necessitate lifestyle changes that require supplemental assistance to help with activities of daily living. Navigating the healthcare system in general is formidable. However, doing so as a geriatric patient with limited eyesight and no social support escalates the challenge.
This is the case for an 80-year-old male with history of vision impairment due to BRAO, coronary artery disease, heart failure, atrial fibrillation, chronic kidney disease, basal cell carcinoma of the nose, gout, and tobacco abuse, with no wife or children, who presented to the Internal Medicine outpatient clinic for follow up. He drove to clinic despite his visual impairment and is adamant about being as self-sufficient as possible, stating that he has been in a nursing home previously and that would be the worst outcome for him as he values his freedom at home above all else. The patient is competent and has the capacity to make decisions. His decision to live at home requires finding care that is in line with his wishes and keeps him safe. He is under Medicare but does not qualify for Medicaid according to Adult Protective Services (APS), which has visited his home twice before. However, Medicare is only able to provide Home-Health services for about 10 hours a week, not sufficient for someone with his health status. Shared decision making among the ophthalmologist, APS, and primary physician led to appropriate documentation of 'Blindness' as a diagnosis providing a wider range of services to the patient through disability.
This case highlights how the role of primary care physicians goes beyond its traditional one. This patient is disabled and without any immediate family, meaning that his healthcare team is the only connection he has to appropriate resources to sustain his quality of life. Documenting this patient's blindness provided greater access to social services, which is a prime example of why physicians should know how to guide their patients through the healthcare system.

Non-Syndromic Multi Focal Non-Ossifying Fibroma: A Diagnostic Challenge of Giant-Cell Rich Lesions
Rachael Turner

Background: Diagnosing GCL can be extremely difficult due to the rarity of these lesions. Histologically many benign GCL mimic each other and can further be mistaken for a malignant GCL. Additionally confusing the diagnosis, many benign GCL have significant morphological overlap. However, it is of utmost importance to arrive at an accurate diagnosis as treatment varies significantly based on the pathology. Our patient presentation highlights that differentiating GCLs can be a diagnostic challenge as illustrated. Our review of the literature found scarce reports of multifocal non-ossifying fibroma. In this case report, we describe a non-syndromic multifocal non-ossifying fibroma successfully treated with biopsy curettage and grafting. This patient was informed that her case would be submitted for publication and she agreed.
Case: A 14 year-old-girl complained of left knee pain for 3 months and radiographic imaging showed a destructive bone lesion at her distal femoral metaphysis, the tibial tubercle, and proximal fibula. The patient had no history of trauma and reported no infectious, inflammatory, or syndromic symptoms. Core biopsy of the left thigh lesion showed findings most consistent with giant cell tumor. Bone scintigraphy revealed new lesions at the distal femur and proximal tibia on the contralateral (right) side. Patient was treated with biopsy curettage and grafting. Intra-operative frozen section permanent reads showed giant-cell rich non-ossifying fibroma. Due to discrepancy in core biopsy and intra-operative biopsy a independent pathology consult was requested on surgical specimens. Histologically, the differential diagnosis included non-ossifying fibroma, giant cell tumor of bone, and ossifying fibroma. Radiographic imaging combined with histology gave a final pathological diagnosis most consistent with non-ossifying fibroma.
Conclusion: Differentiating non-syndromic multifocal non-ossifying fibroma from other giant cell rich lesions can be a diagnostic challenge. A combined approach using histology, clinical presentation, and radiology is imperative in reaching the correct diagnosis.

Obesity Management in Primary Care Medicine: A Review of Obesity Perception and Barriers to Weight Loss
Asma Syed, MS2
Mentor: Saima Siddiqui, MD
Affiliations: Department of Family & Community Medicine, University of Texas Health Science Center at San Antonio; UT Rio Grande Valley School of Medicine

Background: This project addresses the obesity epidemic in America. According to the CDC, in 2018, the US obesity prevalence was 42.4%. Obesity is linked to many conditions including heart disease, stroke, type 2 diabetes, and certain types of cancer. Successfully treating obesity can decrease these leading causes of preventable and premature deaths. A proper understanding of the successes and failures of current obesity management in primary care medicine with the help of qualitative research through patient and provider interviews can elucidate the best practices to reduce the burden of disease in America.
Methods: A review of literature was conducted to assess the barriers to obesity management in primary care clinics using the chronic care model (CCM). Specific inclusion and exclusion criteria were used in gathering research papers published within the last 10 years from PubMed to find relevant literature using keywords including “perception of obesity” OR “barriers to obesity treatment. ”Literature review of qualitative research papers and the creation of specific topics to focus on within obesity medicine was inspired by an interview guide created by the Mindful Choices Weight Loss Management Clinic in the Department of Family Medicine in UT Health Science Center, San Antonio, Texas.
Results: The impact of the negative biases surrounding obesity in the health outcomes of obese individuals was compiled and discussed. Key findings from recent obesity literature include the positive association between a well-informed patient population and successful obesity management. Patient insight into their own disease as being a complex, chronic disease rather than a simple disease of “laziness” or “lack of will-power” had major implications in the success of treatment. Additionally, the existence of a medical provider obesity bias in addition to the failure to document patient’s obesity in medical charts as a result of an under detection of overweight patients was found to have a negative association with obesity management in primary care clinics.
Conclusion: This study provided insight into the patient perception of obesity and how negative biases to obesity can create barriers to obesity management in primary care medicine. This research highlights the importance of continued research in this field and the great potential of understanding obesity through the lens of the Chronic Care Model of Disease.

Palmitoylation as a Regulator of MAGUK Proteins Postsynaptic Localization
Santiago Balderas1, Rozena Shirvani-Arani1, Yonghong Zhang2, Xiaoqian Fang1
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Synaptic plasticity is the ability of the brain to make changes and the changes occur at synapses. To achieve the complicated functions, a good number of proteins are present at synapse and are called synaptic proteins. To stabilize these proteins at synapses, proteins are modified through posttranslational modifications (PTMs). The most studied PTMs include phosphorylation, acetylation, ubiquitination, glycosylation, palmitoylation, etc. Palmitoylation is a type of lipid modification and has received more attention recently for its contribution to protein trafficking, localization, and interaction in various synaptic plasticity. The membrane-associated guanylate kinase (MAGUK) family includes PSD-95, PSD-93 (also known as chapsyn-110), SAP102, and SAP97. They are present in the synapses and regulate the localization of synaptic proteins. Palmitoylation of PSD-95 has been demonstrated to involve in postsynaptic localization of PSD-95. SAP97 and PSD-93 contain palmitoylation sites that are very similar to PSD-95. However, the palmitoylation of SAP102 has not been fully studied. The proteomic analyses suggest the potential presence of palmitoylation of SAP102. In this study, we used human embryonic kidney 293 cells (HEK 293) to express SAP102. SAP102 palmitoylation was assayed using acyl-biotinyl exchange (ABE) method. The basal palmitoylation level of SAP102 and how the palmitoylation regulates SAP102 intracellular trafficking will provide a deeper understanding of SAP102 protein structure and how the protein plays a role at synapses.

Patients Achieving 90°/45°/0° Intraoperative Stability Do Not Require Hip Precautions Following Posterior Approach Total Hip Arthroplasty: A Prospective Randomized Study
Rachael Turner

Background: Hip precautions are traditionally employed after posterior total hip arthroplasty (THA). The primary purpose was to investigate the necessity of hip precautions after posterior approach THA. We hypothesized that eliminating precautions in patients that achieved appropriate intraoperative stability would not increase the dislocation rate.
Methods: Randomized controlled trial of 346 consecutive eligible patients undergoing primary THA with a mean follow-up of 2.3 years (range 11 months to 3.7 years). Exclusion criteria: lumbar fusion, scoliosis, abductor insufficiency, inability to achieve intraoperative stability with combined 90° flexion and 45° internal rotation in 0° adduction. Fisher's exact test was used to compare dislocation rates between the hip precaution (HP) control group and no hip precaution (NP) study group. In addition, Mann–Whitney *U* test was used to compare differences in HOOS JR scores at 2, 6, 12 weeks between groups.
Results: The dislocation rate was not increased in the NP (0/172: 0%) group compared to the HP group 4/174 (2.29%) ($P = .418$). All dislocations occurred in the precautions group, two of which required revision. There were no differences in mean HOOS Jr. scores at any 2, 6, or 12 weeks ($P > .05$ at all timepoints) (secondary outcome).
Conclusion: Eliminating hip precautions in patients undergoing posterior approach THA that achieve 90°/45°/0° intraoperative stability does not increase the rate of dislocation. In fact, every dislocation occurred in patients *receiving* hip precautions. Short-term patient-reported outcome measures were not affected by hip precautions. Surgeons may discontinue the use of hip precautions as the standard of care in patients achieving 90°/45°/0° stability.

Recurrent Hemarthrosis Secondary to Erosive Patellofemoral Arthritis Treated with Arthroplasty: A Report of 3 Cases
Rachael Turner

Background: Spontaneous hemarthrosis of the knee joint in the elderly population is a rare phenomenon and is mostly seen in those with osteoarthritis. The identified causes of spontaneous hemarthrosis in this demographic include subchondral bone bleeding, meniscal tear, genicular artery bleeding, and the use of anticoagulants. Hemarthrosis caused by isolated patellofemoral bleeding, as in this case series, has been rarely documented and poorly described.
Case: Three patients presented with recurrent hemarthrosis secondary to erosive patellofemoral arthritis. Recurrent hemarthrosis from the eroded patellofemoral subchondral bone has not been well described. Each patient presented with symptoms secondary to painful effusions that were identified by aspiration. Each patient was successfully treated with patellofemoral or total knee arthroplasty
Conclusion: Spontaneous or recurrent effusions in the setting of erosive patella femoral arthritis should prompt orthopaedic surgeons to consider hemarthrosis as the cause of such effusions. Patellofemoral or total knee arthroplasty is effective in resolving the hemarthroses, resolving pain, and restoring function in these patients.

Social Determinants of Health and Stage at Presentation of Oral Cavity Squamous Cell Carcinoma in the Rio Grande Valley
Taha Al Hassan

Background: Screening and early detection of oral cavity cancers can greatly impact outcomes and is a baseline objective under the Healthy People 2030 initiative. Currently, 29.5% of oral and pharyngeal cancers are detected at the earliest stage (T1) in the United States. The purpose of this study is to explore the characteristics of oral cavity cancer patients in the Rio Grande Valley and to investigate how certain factors may contribute to, or are associated with, disease development, survival, and stage at presentation.
Methods: Patient chart data from two University of Texas Rio Grande Valley outpatient ENT clinics were evaluated for diagnoses of oral cavity squamous cell carcinoma (SCC). Of the total 1,609 patient charts scanned for oral cavity SCC, 64 patients (4%) met inclusion criteria and were included in the final analysis. Data were analyzed using SAS software version 9.4 and assessed through descriptive and nonparametric statistics. **This study was approved by the Institutional Review Board at UTRGV protocol #22-0122.**
Results: Patients with smoking and alcohol histories (former or current) were significantly more likely to present with later-stage oral cavity cancer (T3/T4) compared to those who never smoked or consumed alcohol ($p = 0.0304$, $p=0.0273$, respectively). Kaplan-Meier analysis demonstrated that cancers detected by otolaryngologists achieve a 75th percentile of survival in 380 days, while those detected by primary care physicians were at 456 days ($p = 0.0459$), indicating longer survival for lesions detected in the primary care setting.
Conclusions: Our data suggest that smoking and alcohol histories are risk factors for developing SCC in the Rio Grande Valley but acknowledge that a large subset of our population (50% and 51.6%) do not consume alcohol or smoke, respectively. Results from this study highlight the need for more accessible oral cancer screening and research in underserved populations to understand the implications of certain population characteristics on survival, quality of life, and the potential role of public health efforts in addressing oral cavity cancer.

The Implications of Obesity on Total Hip Arthroplasty: A Literature Review
Ryan Bialaszewski

Introduction: Obesity is a global pandemic and public health crisis associated with a wide range of comorbidities, including osteoarthritis, leading to a significantly younger age at the time of primary total hip arthroplasty (THA) and an increased rate of complications when compared to nonobese individuals. This has led to concerns regarding the implications of obesity on the need for THA itself and the associated complications in obese individuals, especially for arthroplasty surgeons. This literature review aims to provide a comprehensive review of the implications obesity has on total hip arthroplasties, its associated complications, and how we can potentially modify these risks.
Methods: Articles were identified by searching the databases of PubMed, Google Scholar, National Center for Biotechnology Information (NCBI), and UpToDate.
Results: Obese patients undergo primary THA at an earlier age and experience an increased duration of surgery, higher rates of infection, dislocation, periprosthetic fractures, and venous thromboembolism compared to nonobese patients. The role of pre-operative bariatric surgery before total hip arthroplasty has failed to show reductions in complication rates. Harris Hip Scores are lower in obese patients both pre-operatively and post-operatively, but the degree of improvement following THA is similar compared to nonobese patients. Long-term survival of total hip prostheses is similar when compared to nonobese patients.
Conclusion: Current literature strongly suggests increased complication rates in obese patients who undergo THA. This phenomenon is not solely due to biomechanical forces and is multifactorial, including inflammatory and genetic predispositions, which need further study. The decision to perform THA on obese patients should not solely be based on BMI. Other factors, such as management of comorbidities, surgical exposure, and nursing care, should be considered when deciding on surgical candidacy.

The Morbidity of Greater Trochanteric Pain Syndrome is Similar to that of Hip Osteoarthritis Awaiting Total Hip Arthroplasty
Sonia Wadekar, Avneesh Chhabra, Emily Middleton, Yin Xi, Joel Wells

Background: Greater trochanteric pain syndrome (GTPS) is characterized by chronic lateral hip pain and dysfunction. While psychosocial measures of other tendinopathies have been gaining traction, GTPS is less well studied. We sought to characterize the

morbidity upon presentation of GTPS and compared it to patients with end-stage, hip osteoarthritis (OA) awaiting total hip arthroplasty (THA).
Methods: This study examined patient reported outcomes measures (PROMs) on activity limitations, quality of life (QOL), pain, and level of disability, in all patients with GTPS and end-stage, pre-THA hip OA. All patients presented at a single academic medical center between October 2016 to November 2020. The PROMs were analyzed using an equivalence test and two-one-sided t-tests.
Results: A total of 156 patients (193 hips) with GTPS and 300 patients (326 hips) with hip OA were investigated. Equivalence in mean UCLA Activity score between GTPS and OA groups were established with tolerance margin of ± 5. The difference in mean UCLA score was 0.002 (95% CI -0.45 to 0.43, p HOOSQol score was much worse in GTPS patients, placed well outside of the ± 10 tolerance margin and difference in means score was 1.72 (95% CI -2.17 to -1.26, p = 0.99). All estimated differences were comparable with and without the adjustment for each PROM respectively, suggesting the differences (or the lack of) in the PROMs between GTPS and OA couldn't be explained by the differences in sex, age, BMI, race, ethnicity, or smoking status.
Conclusion: This cumulative evidence characterizes GTPS as painful and limiting in activities of daily living, as pre-THA hip OA, and with poorer quality of life scores than hip OA. This study validates results of other studies that have investigated PROMs between GTPS and pre-THA, hip OA patients. Clinicians and researchers should not underestimate the disease, and further research on characterizing the progression of the disease should be a priority.

Medical Resident Category

A Dangerous Complication of Acute Pancreatitis: Abdominal Compartment Syndrome.
Paulina Vega Enriquez, Andres Adrianza, Henry Kwang

Introduction: Abdominal compartment syndrome (ACS) is defined by an increased in intra-abdominal pressure (>20 mmHg) associated with new organ dysfunction. The mortality is reported to be approximately 50%, even with surgical abdominal decompression. If not treated promptly, it can be fatal in less than 24 hours. Pancreatitis is a well-known risk factor of ACS and is associated with increased mortality and morbidity. We describe a COVID-19 positive patient, with recurrent acute pancreatitis secondary to hypertriglyceridemia, who developed ACS.
Case: A 34-year-old female with history of recurrent episodes of hypertriglyceridemia-induced acute pancreatitis, presents to the emergency department complaining of severe epigastric pain with associated intractable nausea and vomiting. Initial triglycerides level was above measurable range and lipase level was greater than 1000. Patient was admitted to intensive care unit to initiate continuous insulin infusion. On hospital day 2, patient developed an increased intra-abdominal pressure as measured by a bladder pressure greater than 37 mmHg. Patient was immediately taken to the operating room for surgical decompression via laparotomy and wound vacuum placement. While in the ICU, patient returned to the operating room 5 times for washouts. After 3 weeks in the ICU, patient was extubated, switched from TPN to parenteral feeding, and transferred to the floor. The patient continued to have persistent tachycardia, tachypnea, low-grade fevers and leukocytosis and was empirically started on broad-spectrum antibiotic and antifungal therapy. She did not have any localizing symptoms and a extensive infectious work up for infection was initiated. Blood and urine cultures did not grow any organism. Chest x-ray and bedside US confirmed a large left-sided pleural effusion. Thoracocentesis was performed and body fluid culture was negative for infection. Patient went back to the operating room 2 more times for washouts and no abscesses or signs of active intra-abdominal infection was found. At that point with a negative infectious workup, the persistent systemic inflammatory response syndrome was thought to be partially related to the underlying pancreatitis. Patient's clinical status continued to improve through the hospital stay and she was eventually discharged home in stable condition.
Discussion: This case illustrates the complexity and difficulty of managing patients with acute pancreatitis who developed abdominal compartment syndrome. Patients with this combination have critically elevated rates of mortality and morbidity, but fortunately hers was discovered early and managed promptly. As seen in this patient, the high metabolic rate secondary to the ongoing inflammatory response of the pancreatitis can cause physiologic and systemic idiosyncrasy and does not necessitate treatment for infectious etiologies. Although pancreatitis is one of the most common diagnosis in inpatient medicine, abdominal compartment syndrome must be considered in a deteriorating patient, as the line of decompensation is extremely thin.

A Moyamoya Case Report On A Patient With Slurred Speech And Right-hand Weakness.
Mery Bartl

Background: Moyamoya angiopathy (MMA) is a cerebrovascular disease affecting about one in a million people. It is characterized by progressive stenosis of the terminal portion of the internal carotid arteries leading to cerebral hypo-perfusion which in turn induces neo-angiogenesis in the deep parts of the brain. Patients are predisposed to ischemic and hemorrhagic strokes. Diagnosis is usually made with magnetic resonance imaging (MRI) and a magnetic resonance angiogram (MRA) to evaluate the brain and its blood vessels. Symptomatic patients should undergo surgical interventions. A few studies have shown that the superficial temporal artery to middle cerebral artery bypass combined with encephalo-duro-myo-synangiosis (EDMS) can achieve a good therapeutic effect in the treatment of Moyamoya disease.
Case Presentation: A 39-year-old right-handed lady with a history of chronic headaches, a lacunar infarct of the left basal ganglia, and recently diagnosed with Moyamoya disease presented to the ED due to slurred speech and right-hand weakness. On neurological evaluation, the patient was alert and oriented with a flat affect. Her cranial nerves were grossly intact, and sensory functions were preserved. She only had mild fine motor coordination deficits. Imaging showed no acute changes. The patient was already on maximum medical management with dual antiplatelet therapy and had an unsuccessful endovascular revascularization. Plastic surgery and Neurosurgery were consulted, and she underwent a left frontoparietal craniotomy for superficial temporal artery to middle cerebral artery bypass with concurrent EDMS. A post-surgical angiogram evaluating the carotid artery bypass showed good blood flow. A CT scan without contrast showed surgical changes from recent parietal craniotomy with a small amount of pneumocephalus on the left and minimal hemorrhage in the subdural space which was expected post-surgery. There was no evidence of mass-effect, midline shift, or parenchymal hemorrhage. The patient was stable and discharged to inpatient rehabilitation.
Conclusion: Our patient showed how a joint bypass procedure and EDMS provided efficient revascularization and helped achieve a good therapeutic effect with very few complications. Moyamoya is a rare disease with small evidence published on effective treatments. This case highlights the surgical treatment protocol for Moyamoya disease as an effective way to improve the short- and long-term outcomes.

A Patient with Advanced Head and Neck Squamous Cell Carcinoma Presenting with Unexplained Syncope
Andreina Baird, MD, Eric Sanchez, MD, Dawn Jensen MS, Daniela Hernandez, MD

Background: Head and neck squamous cell carcinoma (HNSCC) arise from the mucosal epithelium in the oral cavity. These malignancies account for 90% of the US annual incidence of head and neck cancers. Rarely, these masses can cause syncope. In this case, we present a 61-year-old male from an underserved population in the Rio Grande Valley, with advanced HNSCC, causing carotid sinus syndrome (CSS), due to compression of the carotid sinus by the tumor. Probability of syncope in this setting is <1%.
Case Presentation: A 61-year-old male with HNSCC presented to the emergency department with facial pain, increased oral secretions, fever, dysphagia, dyspnea, and chest pain. The patient described falls from syncopal episodes. Physical exam was notable for a 4cmx13cm right jaw mass with necrotic tissue and purulent drainage, admitted for suspected osteomyelitis. Admission workup showed leukocytosis, and a mass extending and destroying the mandible. During the second day of admission, Telemetry recorded an asymptomatic episode of sinus bradycardia with an R-R pause that lasted 2-3 seconds. The next night, the patient had symptomatic bradycardia on ambulation. During the fourth night of admission, another episode was recorded with a rate of 44 bpm, for 2.6 seconds. Cardiology was consulted and placed a Holter monitor for 48 hours. EKG showed normal sinus rhythm with right bundle branch block, with no indication for Pacemaker. During the fifth night, the patient had an episode of symptomatic bradycardia that lasted 4.056 seconds, with an R-R pause, and with HR of 29 bpm. Cardiology reviewed the case and planned for Pacemaker placement. The patient continued to have similar episodes throughout the day. The next day a Pacemaker was placed, and the patient was discharged home with no complications. Due to lack of social support the patient was lost to follow-up after discharge.
Conclusion: The diagnostic evaluation of syncope should be tailored according to the patient's history and physical exam. Despite being a diagnostic and management challenge physicians should have a low threshold of suspicion for CSS in patients with HNSCC presenting with syncope with no clear etiology. More data is needed to aid in the management of this patient population.

A Resident Led Quality Improvement Project to Increase Diabetic Nephropathy Screening in an Underserved Hispanic-Predominant Population

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Background: Diabetes is the leading cause of end-stage renal disease (ESRD) in the United States, with 37 million having chronic kidney disease. Unfortunately, despite guidelines recommendations from the American Diabetes Association and the Kidney Disease Improving Global Outcomes for diabetic nephropathy, screening with urine albumin-to-creatinine ratio (UACR) and annual estimated glomerular filtration rate (eGFR), there is still poor screening rates throughout the country. Our aim is to increase the screening for type 2 diabetic nephropathy in our GME Internal Medicine clinic.
Methods: Our group of 10 Internal Medicine residents and 2 faculty advisors conducted this project from July 2021 to April 2022. We used the electronic medical record (EMR) to determine the screening rates in patients with diabetes using UACR. Our interventions included resident education, adding reference range of UACR in the EMR, highlighting abnormal results of UACR in the EMR, and including UACR in the low-cost wellness laboratory order form. We calculated the probability ratio and attributable probability of being screened after the intervention and used a pre and post survey to assess resident knowledge. Analysis was performed with Stata version 17.0.
Results: We included 217 patients with diabetes from which90% identified as Hispanic. Comparing pre and post intervention, there was a significant change of 45 (20.7%) vs 71 (32.7%) patients screened for diabetic nephropathy with a UACR. The probability ratio for being screened before intervention was 1.6 (95%CI 1.2, 2.1; p=0.003). If screening only completed in the post-intervention period the probability ratio increased to 3.2 (95%CI 2.4, 4.3; p<0.001with an attributable risk to the intervention of 46%. (95%CI 37, 56%).The correct average score of knowledge-based questions was 82%in 47 residents on the pre-intervention survey, which increased to 88% in 50 residents in the post intervention survey.
Conclusion: Through education, EMR optimization and updates to the low-cost lab order form, our resident-led quality improvement project increased screening for diabetic nephropathy from 20.7% to 32.7%which reached our goal of 50% increase. We found the resident-led QI project to be feasible and effective even in an underinsured and high-risk Hispanic population.

A Stomach Bug? Not What You May Think: A Case of Post-Viral Gastroparesis Caused by SARS-CoV-2
Adrienne Anderson

Introduction: Gastroparesis has a wide range of etiologies including diabetes, medications, post-surgical, post-viral and idiopathic.1SARS-CoV-2 can cause gastrointestinal symptoms which typically resolve within the first few weeks of infection.2However, some sequelae persist beyond the initial infectious period.
Case Description: A 56-year-old female with Type II Diabetes Mellitus presented with a syncopal episode and a two-month history of intractable nausea, vomiting, oral intolerance, and unintentional20lbs weight loss following COVID-19 infection. She had no prior gastrointestinal problems. On exam, she had orthostatic hypotension and appeared debilitated with dry mucous membranes. Initial laboratories showed electrolytes abnormalities and a hemoglobin A1c of 7.4.She was treated with intravenous fluids, electrolyte repletion, and ondansetron, but her nausea and vomiting persisted. CT abdomen and EGD ruled out mechanical obstruction. Gastric emptying was positive with a half-emptying time of 114 minutes. Her symptoms fully resolved over time following a short course of metoclopramide and a brief period of supportive measures. The patient does have a history of diabetes, a known etiology for gastroparesis. However, her symptoms started and continued for several months following COVID-19 infection, despite adequate glycemic control as evidenced by her hemoglobin A1c. Her gastroparesis was thus attributed to a SARS-CoV2.
Discussion: Though post-viral gastroparesis is a known subset of idiopathic gastroparesis, few cases of post-COVID gastroparesis have been reported.3Most cases represent an exacerbation rather than an index event.4Several pathophysiologic mechanisms have been hypothesized. SARS-CoV2 usesACE-2, which is expressed in the glandular cells of gastric, duodenal and rectal epithelium to enter host cells and replicate. Studies of the previous SARS epidemic showed active replication in both the small and large intestine. Post-viral injury to the smooth muscle and interstitial cells of Cajal may also lead to delayed gastric emptying.4Given the lack of available data to guide management specific to post-COVID gastroparesis, our patient was managed based upon existing recommendations for post-viral gastroparesis and improved with this approach.

A swinging heart: Relevance of point of care ultrasound in the diagnosis of an atypical complication of acute pericarditis

Oscar Rodrigo Zamudio Herrera, Nevin Varghese

Background: Cardiac tamponade is a life-threatening condition, that results from progressive or acute accumulation of fluid in the pericardial space impairing cardiac hemodynamics. It is a rare complication of acute pericarditis. About two-thirds of acute pericarditis present with pericardial effusion. Of which, hemodynamic instability is seen in 3-5% of the cases. Point of Care Ultrasound is a cost-effective tool that aids in the prompt identification of life-threatening conditions such as tamponade.
Case presentation: 36-year-old male presented with complaints of fever and dyspnea on exertion for 4 days. He reported being tachycardic at home on his personal pulse oximeter. Past medical history was significant for asthma. Vital signs upon admission were T 101.5 F, HR 128 bpm, RR 20, BP 115/72mmHg SpO2 97% on room air. On the physical exam, there was no jugular venous distention, lungs and heart sounds were normal. There was inspiratory variation of systolic blood pressure more than 10 mmHg consistent with Pulsus paradoxus. Laboratory analysis showed WBC 15.83, Hb 15.4, Platelets 336, and negative troponin. Infectious work up including covid was negative. EKG showed sinus tachycardia, low voltage in precordial leads, PR segment depression in lead II, V5, V6 and PR segment elevation in AVR and V1. Point of care ultrasonography was done at the bedside which revealed a large pericardial effusion with diastolic collapse of the right ventricle. This was suggestive of cardiac tamponade prompting an emergency transfer for pericardiocentesis. Right heart catheterization revealed cardiac tamponade physiology and 1150 ml of pericardial fluid was removed. The patient was diagnosed with idiopathic pericarditis after further workup. He was started on colchicine and ibuprofen with clinical improvement, hence discharged with follow up.
Conclusion: Cardiac tamponade is a rare and life-threatening complication of acute pericarditis, associated with high morbidity and mortality. Cardiac tamponade might not always have the classical clinical presentation. Point of care ultrasound expedites the diagnosis of tamponade physiology in a safe and cost-effective manner. Thus, early detection of cardiac tamponade helps in life-saving emergent interventions in a resource limited setting. Front-line practitioners and training physicians may benefit from point-of-care ultrasound training strategies in their institutions.

A Two State-Wide Population Based Analysis of Hepatosplenic T-Cell Lymphoma in Hispanic Vs Non-Hispanic Patients in Texas and Florida

Christine Loftis

Introduction: Peripheral T-cell lymphomas (PTCLs) are a diverse, aggressive form of neoplasms that are rare and constitute <15 % of all non-Hodgkin lymphoma cases(Am J Pathol, PMID:1698028). A sub-set of PTCLs is hepatosplenic T-cell Lymphoma (HSTCL) which is described as an extra-nodal T-cell lymphoma of mature gamma or delta T-cells(Am J Pathol, PMID:1698028).HSTCL is extremely rare accounting for less than 1% of all cases of NHL and because of this, epidemiological research is lacking(Blood PMID: 21300984).Hispanics(H)are one of the fastest growing races in the US but tend to have poorer cancer related health outcomes in comparison to non-Hispanic(NH)(J Lat Psychol. PMID: 27429867).Per the 2020 Census, 39.7% Texans and 26.4% of Floridians identify as Hispanic (H) composing the third and fifth highest H population in the nation. Despite the rapid growth of H, research remains lacking in this population. The goal of this study is to compare demographic, treatment patterns, and survival outcomes in H v Non-Hispanic(NH)of Texas (TX) and Florida (FL).
Methods: This is a retrospective study of a cohort of patients diagnosed with HSTCL from the Texas and Florida Cancer Registry databases. The population included in this study were adults of 18 years(y)of age and older during 2006-2017, patients were identified by the International Classification of Diseases for Oncology Third Edition (ICD-O-3) code list, and data was provided to us completely de-identified. Patients were divided into H and NH for comparison. Standard demographic, socioeconomic, clinical, and survival variables were reviewed. All statistical testing was determined using Fisher's Exact test, Pearson's Chi-square test, T-test or Wilcoxon test, as appropriate. Survival time was measured using the day of diagnosis to last date of follow up or death. Survival distribution were calculated based on Kaplan-Meier curves. All statistical testing was two-sided with a significance level of 5%.
Results: A total of 27 patients in TX and 29 patients in FL met the inclusion criteria for the analysis. From those, 2 in TX and 4 in FL were H, and 25 in each state were NH. The median age at diagnosis in y was 46 y for H and 50 y for NH in TX[p-value 0.69] versus 53 y for H and 49 y for NH in FL[p-value 0.67]. In TX, 32%of NH patients fell within the poverty indicator of 5-9.9% while 50% of H patients were between 10-19.9%% and 50% between 20-100%.In FL36% NH fell within 10-19.9% versus 50% H fell within poverty index of 5-9.9%. However, there was no statistical significance between poverty index or race in either state. Although no statistical difference was noted, in TX39.1% of NH had private insurance versus 100% of H (n=2) whereas in FL64% of NH and 50% of H had private insurance. In TX, both NH and H were more likely to receive chemotherapy with multiple agents, 48% and 100%, respectively. In FL56% of NH and 50% H received chemotherapy with multiple agents. The median survival time for H in TX was 0.5y vs 0.6y of the NH in contrast to the H in FL with 5.1y vs 1.0 y of NH. In TX, the survival probability at 2and 5 y for the H was

0.5(CI0.125-1) and0.5(CI 0.125-1) vs 0.254 (CI 0.122-0.529) and0.191(CI 0.076-0.481) for the NH. In FL, the H survival probability at 2 and 5 y was 0.5(CI 0.188-1) and 0.5(CI 0.188-1); for the NH, the survival probability at 2 y was0.29(CI 0.148-0.558), at 5 y0.19(CI 0.08-0.459) and 10 y 0.19 (CI 0.08-0.459).
Conclusion: There were no statistical differences when comparing survival time, demographics, treatment, or insurance status between NH and H in either TX or FL. Of note, the median survival time was greater for H in FL when compared to H in TX while most H patients in FL fell within a lower poverty index compared to H patients in TX. It is possible to deduce that socioeconomic status plays a role in healthcare outcomes in the H regardless of insurance status. This is imperative because healthcare literacy can be correlated to socioeconomic status which can potentially affect adherence to medications, follow-up appointments, and understanding of the disease process and its impact on quality of life. Although this data does not show any statistical differences between patient populations, it highlights the importance of the progress that needs to be made to determine how ethnicity and socioeconomic status impact disease burden in H.

A Whole Clotta Pain: A Case of IVC Thrombosis Presenting as Severe Abdominal Pain in a Patient with Anti-Phospholipid Syndrome and Recent Diagnosis of COVID-19

Christine Loftis, Mery Bartl, Josenny Rodriguez-Paez, Emilia Dulgheru

Background: Anti-phospholipid syndrome (APS) is an immune-mediated condition characterized by the presence of antiphospholipid antibodies in the setting of venous and arterial thrombosis and or pregnancy loss. APS can be a primary syndrome or can be associated with connective tissue diseases such as systemic lupus erythematosus. The goal of treatment in patients with APS is to decrease the risk of thromboembolic events and the standard of care is warfarin therapy. It has been well documented that COVID-19 has been associated with an increased risk for thrombotic events and can possibly potentiate symptoms in patients with underlying APS. This case highlights the importance of appropriate anticoagulation in patients with APS and recognizing that COVID-19 can increase risk of thrombotic events in these patients.

C**ase Presentation:**

A 42-year-old man with a past medical history of APS presented to the hospital with a 7-day history of bilateral, dull, non-radiating, generalized abdominal pain. He denied any associated diarrhea, constipation, changes in urination, fever, nausea, or vomiting. Of note, the patient had been treated for COVID-19 PNA 2 months prior to current presentation. Physical examination was notable for tachycardia with HR 110s, BP 150/100 mmHg, and a distended, tender abdomen with visible abdominal varicosities. Labs revealed a WBC 20,000, creatinine of 2.0, AST 15, ALT 20, alkaline phosphatase 101, INR of 1.12, and a PTT of 62.2. CT abdomen and pelvis without contrast showed severe narrowing and occlusion of the infrarenal inferior vena cava over a length of 6-7 cm with dilated tortuous varices. Liver US demonstrated normal-appearing flow in hepatic veins and the intrahepatic IVC. The patient was evaluated by surgery however recommendations were made to treat the patient medically with a heparin drip with bridge to warfarin.

Discussion:

Growing literature has shown an increased risk of thrombotic events in patients with COVID-19 PNA. It is postulated that the increased risk of thrombosis is due to endothelial inflammation, disruption of intercellular junctions, and microthrombi formation. Furthermore, patients with COVID-19 have been found to have antiphospholipid antibodies and although there is mixed data regarding the pathogenicity of these antibodies, few case reports have reported potentiation of thrombotic events in patients with underlying APS. Warfarin is the standard of care in patients with APS as it has been shown to be superior to direct oral anticoagulant (doac) therapy in preventing thrombotic events in these patients. Appropriate anticoagulation therapy in patients with APS and concomitant or recent diagnosis of COVID-19 is important as these patients can develop severe, life-threatening thrombotic events. Given the episode of venous thrombosis on doac therapy, our patient will be on lifelong warfarin therapy with an INR goal of 3.5. He has not had recurrence of thrombotic events.

Acute Eosinophilic Pneumonia in a Patient with Long Standing Behcet's Syndrome

Juan Naranjo, Shadi Jafari, Christine Loftis, Emilia Dulgheru

Background:

Behcet's syndrome (BS) is a multisystemic disease that frequently manifests as oral and genital ulcers. Pulmonary involvement occurs in approximately 18% of patients and can have complex clinical manifestations, including vascular disease, hemorrhage, infarctions, and organizing pneumonia. Broad-spectrum radiological findings like loss of lung volume, lung opacities, and indistinct

nodular or reticular lesions have been described. There is little data on the association between Behcet's disease and eosinophilic pneumonitis; the latest is usually characterized by eosinophilic infiltration of the lung parenchyma caused by a hypersensitivity reaction to an inhaled antigen. Patients usually present with nonproductive cough, dyspnea, fever, and constitutional symptoms, mimicking many pulmonary conditions. Diagnosis is based upon clinical criteria and bronchoalveolar lavage with >25 eosinophils present. Management includes supportive care, antibiotics, and chronic immunosuppression, usually with high-dose steroids and mycophenolate.

Case Presentation:

A 40-year-old woman with a history of long-standing Behcet's syndrome, eczema, and allergic rhinitis, chronically immunosuppressed with mycophenolate mofetil, presented with acute onset shortness of breath, weakness, and productive cough and fever. Initial workup evidenced eosinophilia and elevated inflammatory markers. PCR for COVID-19, mycoplasma, legionella, HIV, and respiratory cultures were negative. Chest X-ray showed bilateral airspace opacities associated with small pleural effusions that were also evident on CT angiogram; reactive hilar and mediastinal lymphadenopathy was also noted. The patient was started on oxygen supplementation, IV antibiotics with Levofloxacin, and mycophenolate mofetil was discontinued. Bronchoscopy with bronchoalveolar lavage was performed and was remarkable for increased eosinophils suggestive of acute eosinophilic pneumonitis. The patient was started on IV methylprednisolone with further symptomatic improvement.

Conclusion:

Due to its prothrombotic nature, pulmonary involvement in Behcet's syndrome is mainly secondary to vascular disease. The association between BS and eosinophilic pneumonia is infrequent, making the diagnosis and treatment challenging due to the non-specific symptomatology and broad-spectrum differential diagnosis. Currently, there are no diagnostic criteria other than clinical and bronchoalveolar lavage with the presence of eosinophils. Immunosuppression therapy has shown to be beneficial, although there is still a lack of evidence regarding the length and dosing of glucocorticoid therapy.

Adapting a Medication Reconciliation Process to the Family Medicine Outpatient Setting

Iliana Chapa

The Institute of Healthcare Improvement states that "medication reconciliation is the process of creating the most accurate list possible of all medications a patient is taking" so that physicians may know what medications the patient is taking, at what dose, and to identify any discrepancies between prescriptions during the patient encounter. However, the medication reconciliation rates of the DHR Family Medicine Center are not optimal as many med reconciliations remain uncompleted. An adapted protocol from a previous quality improvement project done at DHR Women's Clinic in 2020 was implemented to seek to improve medication reconciliation rates. This Quality Improvement Project was conducted as a retrospective analysis of the medication reconciliation compliance rates by family medicine residents at the UTRGV-DHR Family Medicine Center from January to March 2022. Medication reconciliation rates were determined number of mediation reconciliations completed for the total number of patients seen by the resident. Residents underwent an education intervention on the medication reconciliation process and attendings/preceptors were to remind residents during sign out starting at the end of January to compare pre and post intervention rates of completion. UTRGV-SOM Biostatistics department was consulted for analysis of the data. We included 21 residents from the UTRGV-DHR Family Medicine Residency. Panel analysis showed increase in the probability of reconciliation (p=0.006). The global analysis showed the rate reconciliation success had an initial median 94% which increased to 100 at the third month. The attributable increase due to the intervention was 9%. The standardized protocol for medication reconciliation education and reminders are effective in increasing the rate in during patient encounters.

An Unusual Case Presentation of Chronic Superior Mesenteric Vein Thrombosis

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Introduction: Intestinal ischemia can be caused by any process that reduces intestinal blood flow. Mesenteric venous thrombosis (MVT) describes thrombosis of the superior or inferior mesenteric vein, and represents approximately 10 percent of all cases of acute mesenteric ischemia. The incidence of MVT has increased over the past 40 years, likely as a result of greater use of abdominal CT, and may present with acute abdominal pain or as an asymptomatic incidental finding on abdominal imaging. We present a rare and unusual case of MVT.

Case presentation: A 42 year old female with decompensated alcoholic liver cirrhosis presented to the ED with severe RLQ pain associated with nausea and non bloody emesis. She had a pulse of 130, BP of 102/47 and temperature of 102.5. Physical exam

demonstrated a mildly distended abdomen with tenderness to palpation of the right upper and lower quadrants, and a negative fluid wave shift. Lactic acid on admission was 3.9. She was resuscitated with IV fluids and started on broad spectrum antibiotics. Blood cultures on admission grew E. coli. Lactic acid continued to rise despite fluid replacement and antibiotics, and her pain did not subside. A CT abdomen & pelvis with contrast was ordered for concern of acute appendicitis, and was notable for thickening of the terminal ileum with a normal caliber appendix. Her lactic acid peaked at 6.7, and concern arose for mesenteric ischemia. A CT angiography abdomen & pelvis was done revealing a chronic occlusion of the central superior mesenteric vein, with cavernous transformation. The patient's lactic acid improved, and she remained hemodynamically well compensated despite no intervention pursued for her MVT after involving GI and IR. She was eventually discharged in stable condition.
Discussion: Two large series demonstrated that chronic MVT accounts for 24% to 40% of total cases of MVT.Our patient had the rarer chronic MVT in the setting of suspected mesenteric ischemia, however, this was likely an incidental finding and was not the source of her pain. Our case highlights the importance of acknowledging the different presentations of MVT such that investigation and management is not confounded by the rarity of the pathology.

Bitten to the bone: A case of anxiety-induced osteomyelitis
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Background: Onychophagia is a habitual nail-biting disorder, usually associated with mental or emotional diseases. It affects 20–30% of the population in all age groups. Human bites have the potential to become serious injuries due to high virulence in the human oral flora and may often require hospital admission, antibiotics and even debridement in the operating room. Thus, repetitive nail biting has the potential to be limb-threatening if not treated early and appropriately.
Case Presentation: Patient is a 49-year-old gentleman with a past medical history of severe refractory anxiety treated with hydroxyzine and scheduled alprazolam, after failing multiple other treatments, who was admitted to the hospital due to cellulitis of the right third digit after failing outpatient antibiotic therapy. On the initial physical exam, the patient had a lack of fingernails and multiple wounds at various stages of healing across all digits. The distal and middle phalanges of the 3rd right digit showing increased erythema and swelling and band tightening. Patient was started on broad spectrum antibiotics. Initial Xray of the right hand was concerning for osteomyelitis which was later confirmed with Magnetic Resonance Imaging (MRI). Infectious disease agreed on a course of cefepime, vancomycin and metronidazole. Hand surgery did not see a need for amputation initially though patient did require fasciotomy of the flexor compartment of the right middle finger at day 6 of admission due to slow recovery. Hand surgery however was not convinced patient would make meaningful recovery and advocated for amputation of finger, but patient decided to continue non operative treatment. He was discharged to a skilled nursing facility where he was to continue intravenous antibiotics for 4 more weeks.
Conclusion: The vulnerable patient population of south Texas is predominately Hispanic, Spanish-speaking and uninsured. It is imperative to treat psychiatric disorders early to prevent complications, however, given the few numbers of psychiatrist in the Rio Grande Valley and even fewer who speak Spanish it is not unusual find an appointment in more than 6 months out. In this case, we observe the limb-threatening complications a simple "bad habit" can lead to if not treated early and appropriately.

Coccidioides immitis presrning with acute hydropneumothorax in an immunocompetent patient from South Texas
Paulina Vega, MD (ACP member), Cesar A. Peralta, MD (ACP member), Yaman Gibran, MD (ACP member), Maxwell Hill MS3, Jose E. Campo Maldonado MD, MSCI, FACP.

Coccidioidomycosis is a disease caused by the dimorphic fungi Coccidioides immitis and Coccidioides posadasii. Southern California and Southern Arizona have the highest reported rates of "Valley fever", however coccidioides is also found in parts of West Texas and along the Rio Grande River. Incidence tends to decrease in the eastern part of Texas close to the Gulf of Mexico likely because of increased humidity. Coccidioides incidence also vary with season, winds severity, dust storms and wildfires. We present a case of a 27-year-old male with a history of e-cigarette smoking who presented to our institution with a 3-week history of shortness of breath and pleuritic chest pain and acute hypoxic respiratory failure. He initially presented to another institution where he was diagnosed with a left sided pneumothorax and a chest tube was placed. After the procedure, he described feeling immediate relief and left against medical advice before evaluation was completed. The chest tube was removed six days later in the outpatient setting, but his symptoms rapidly recurred, which prompted the patient to pursue a higher level of care. Chest x-ray on admission revealed a large loculated left pneumothorax with atelectasis and infiltrates. Furthermore, the patient reported that 2 years prior to presentation, he worked as an electrical lineman in Central California. At the time, he described having a painful

nodular rash on his lower extremities with spontaneous resolution. Since his return from California, he had an insidious and intermittent dry cough, which he had mostly ignored. A CT of the chest confirmed a large left hydropneumothorax with atelectasis of the entire left lung and his initial blood work revealed eosinophilia. He had a chest tube placed, and cardiothoracic surgery performed VATS procedure with left lung decortication and pleurodesis. During the procedure, a three-centimeter abscess in the left upper lobe was found and samples were sent for pathology and microbiological evaluation. During the hospitalization, coccidioides antibodies by complement fixation were positive with a titer of 1:16. Cultures from lung tissue specimen grew mold within a week, which was compatible with coccidioides readily growth pattern in culture media at 35°. Given risk of exposure to the laboratory personnel our team communicated our diagnostic suspicion to the laboratory. Postoperative serial chest x-rays showed re-expansion of the left lung. Eventually, chest tube was removed, and the patient was discharged on Voriconazole pending final identification of the mold. After the patient was discharged, culture results were finalized isolating Coccidioides immitis. The results were communicated to the patient and the outpatient care team; and he was switched to fluconazole therapy. Coccidioidomycosis is more commonly a subclinical and self-limited disease in up to sixty percent of cases. Acute pneumonia (Valley fever), extra thoracic disseminated infection and complications occur more frequently in immunocompromised hosts. With more frequent wildfires in the Western United States, Coccidiomycosis has increased by almost sixfold in the last two decades in endemic areas. We present a case of severe coccidiomycosis in an immunocompetent host who lived in central California for two months, 2 years prior to manifesting severe respiratory compromise.
Clinicians should be able to recognize differential diagnoses for cavitary-like lung lesions, paying close attention to social history and CDC epidemiology data.

Comparison of the Clinical Outcomes of Open Surgery Versus Arthroscopic Surgery for Chronic Refractory Lateral Epicondylitis of the Elbow
CHANGHO YI

Numerous surgical options have been introduced for the treatment of chronic refractory lateral epicondylitis of the elbow, but it remains unclear which option is superior. The clinical outcomes of an open surgery group and an arthroscopic surgery group were evaluated, and the results of the 2 procedures were compared. From among patients with lateral epicondylitis refractory to 6 months of conservative treatment, 68 patients satisfying study criteria were recruited. Open surgery was performed in 34 cases (group 1), and arthroscopic surgery was performed in 34 cases (group 2). Compared with preoperatively, the 2 groups had significantly improved values for grip strength, range of motion, and Disabilities of the Arm, Shoulder and Hand score at 12 months postoperatively. Group 1 had significantly greater improvements in grip strength and visual analog scale pain score compared with group 2 (P=.048 vs P=.006). Group 2 had significantly greater (P=.045) improvement in pronation compared with group 1. Group 2 returned to work sooner than group 1. On the questionnaire regarding satisfaction with surgery 24 months postoperatively, 4 patients (12%) in group 2 reported dissatisfaction compared with no patients in group 1. Open surgery and arthroscopic surgery both yielded good clinical results. Nonetheless, for patients requiring muscle strength or having severe pain at work, open surgery would be more effective.

Culture-Negative Endocarditis Complicated with Mycotic Aneurysm and Intracranial Bleed - A Case Report
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Background: Blood culture-negative infective endocarditis(IE) requires at least three independent blood samples with negative cultures after seven days of incubation. Ischemic events are the most frequent neurologic complication of IE with intracranial mycotic aneurysms being the consequence of displacement of septic emboli from valvular vegetations. In this case report, we describe a young gentleman who initially presented with neurologic deficit and was later found to have mycotic aneurysms and culture negative infective endocarditis.
Case Presentation: A 34-year-old man with a past medical history of Tourette Syndrome presented to the Emergency department (ED) due to acute change in mental status. In the ED, the patient was found to have a Glasgow Coma Scale of 4 and was immediately intubated. Initial computed tomography (CT) of the head without contrast showed a large intraparenchymal hematoma within the left frontal lobe with internal hypoechoic densities suggesting active bleeding and a left-to-right midline shift. A subarachnoid hemorrhage was also noted on the left. The patient was taken to the operating room for emergent right ventriculostomy placement. Subsequent CT angiography of the head revealed a focal lobulated area of contrast density suspicious for a ruptured

aneurysm. An additional peripheral aneurysm was found within the peripheral aspect of the right parietal lobe. Due to peripheral location of the aneurysms, they were deemed to be mycotic and patient underwent embolization of the left frontal and right parietal aneurysms. Patient was initially treated with vancomycin and piperacillin-tazobactam for the first 24 hours and was later switched to vancomycin, ceftriaxone, and tobramycin by the infectious disease specialist. Due to patient having recurrent fevers despite antibiotic therapy, a transesophageal echocardiogram (TEE) was performed showing a small mobile echodensity on the anterior leaflet of the mitral valve, highly suspicious of vegetation and endocarditis. The anaerobic bottle of the initial blood culture grew anaerobic gram-positive cocci, identified as Finegoldia magna suspected to be a contaminant. Subsequent cultures were negative.
Conclusion: Currently, there are no randomized trials to guide the management of infected aneurysms. Management strategies are based upon clinical experience usually with antibiotic therapy combined with surgical debridement and revascularization.

DIAPHRAGMATIC RUPTURE DUE TO CLOSED THORACOBDOMINAL TRAUMA: A CASE REPORT
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Background: Diaphragmatic injuries (DI) represent less than 1% of traumatic injuries; they are a marker of severe trauma due to associated injuries, although they often go undiagnosed as they remain hidden. If undetected, delayed herniation and strangulation of the abdominal organs into the chest cavity will result as the defect in the diaphragm is not repaired. DI occurs from penetrating or blunt trauma. The former occurs in approximately 67% of cases; direct injury to the diaphragm caused by automobile accidents has been reported. The remaining third is due to falls and crush injuries. Blunt trauma causes larger tears, even bilateral. Mortality from DI reaches 25% of cases and is higher in patients with blunt mechanisms of injury in the acute setting due to associated injuries. Mortality due to delayed presentation with hernia of abdominal contents into the chest due to previous penetrating trauma is 20% and increases with intestinal strangulation.
Case presentation: Male, two years, and eight months-old, admitted to the emergency department due to thoraco-abdominal trauma due to being crushed by a truck tire. Tachypnea and stable vital signs were observed. Chest X-ray revealed elevated diaphragm and right pleural effusion. The patient continued to have dyspnea. Abdominal ultrasound confirmed elevation of the hemidiaphragm. Computed tomography of the chest showed the hepatic gland within the chest cavity. In the operating room, a right lateral thoracotomy was performed, observing diaphragmatic rupture. To correct and restore the hepatic gland to its normal anatomical site, the ruptured diaphragm was sutured with 2-0 Prolene®, supported with a bovine pericardium band, and subsequently a 12-Fr®chest tube was placed. In the end, it was closed by planes.
Conclusions: The patient presented a blunt diaphragmatic injury. Intra-abdominal pressure increased above the tensile strength of diaphragmatic tissue. The patient evolved favorably in the postoperative period. He was kept under observation for ten days and was discharged without complications. After discharge, follow-up was performed without observing a diaphragmatic hernia or other injury.

Duolingo to Improve Linguistics of the Medical Resident
Cameron LanCarte, James Fahey

This QI project was created to design a Spanish language curriculum within a medical residency to increase the quality, efficiency, and equality of healthcare received by patients. The learning modality, DuoLingo language education application, was chosen for being easily accessible, offering small study timeframes, being user-friendly, and designed in a game format. Duolingo allows users' learning to be tracked. The duration of the QI Project was 14 weeks, and the population size was 3 participants. Each were requested to complete 70 min/week of Spanish education on DuoLingo. Participants linked accounts with the project lead to allow monitoring throughout the study. The goal was to see if this time requirement was feasible for physicians-in-training to complete. The results concluded that it was not feasible. Average time spent a week was 7.4 minutes. One subject did not participate at all and another averaged 98 minutes per week. Possible factors leading to unfeasibility are long time length requirement, the study time frame, and the participants ability to prioritize duties. The next phase of the QI project will start during the second half of the year allowing for residents and fellows to adjust to new yearly responsibilities. In addition, the time requirement will be decreased to 40 min/week. A post study survey will be conducted to understand the Duolingo's feasibility with the new time requirement. Once feasibility is determined, the next step will be to determine the efficacy of using DuoLingo to learn Spanish.

Enhancing appropriate statin therapy in Type 2 Diabetic patients aged 40-75 years at Graduate Medical Education Internal Medicine clinic

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Background: The prevalence of type 2 diabetes mellitus (T2DM) is significantly higher in Rio Grande Valley than the rest of the United States. T2DM patients have an elevated risk of Atherosclerotic cardiovascular disease (ASCVD), and clinical trials have demonstrated the beneficial effects of statin therapy on ASCVD.A quality-improvement project was implemented in the GME Internal Medicine(IM)Clinic at Doctors Hospital at Renaissance to improve statin therapy appropriateness.
Methods: T2DM patients aged 40-75 were selected from the GME IM Clinic visits from July 2021 to October 2021 for baseline data and from January 2022 to April 2022 after implementing our interventions, which included education of the new practice guidelines of statin therapy in T2DM to the internal medicine residents, as well as development of a clinical decision support tool designed to assess the indication and intensity of statin therapy. Exclusion criteria included patients without T2DM, ages above 75/below 40 years of age, and missing information for ASCVD risk stratification. Statin appropriateness was determined according to the American Diabetes Association standards in diabetes management.
Results: The number of patients in the four months after the exclusions pre-intervention and post-intervention were 153 and 207, respectively. Overall, 71.9% (n=110) of the patients pre-intervention were receiving an appropriate statin therapy; the number increased to 80% (n=166) post-intervention (p = 0.003), considered statistically significant using t-test analysis. Of the total patients (N=43) with inappropriate statin therapy, 37% (n=16) had inadequate dose, and 63% (n=27) were not receiving any statin in the pre-intervention cohort. This percentage of inadequate statin dose and no statin therapy decreased to 65% (n=27) and 35% (n=14), respectively post-intervention.
Conclusion: Appropriate statin therapy has been shown to reduce all-cause mortality by 19% in T2DM. Appropriateness of statin therapy was increased by 10%, and more than 50% reduction of patients without receiving any statin therapy, after our intervention. Effective implementation of new guidelines regarding risk stratification and prevention of ASCVD in T2DM age 40-75 years of age may be challenging. Barriers such as physicians' adoption and knowledge regarding new guidelines can be overcome with appropriate tools and education, such as those implemented in our project.

Euglycemic DKA with decompensated Hypothyroidism in the setting of recent CVA

Alfarooq Alshaikhli, MD;Sergio Saenz,MD; Jose Gomez Casanova,MD; Christian Thomas, Asbiel Hasbum, Daniela Hernandez. MD.

Background: Euglycemic diabetic ketoacidosis (EDKA) is an underdiagnosed endocrine emergency. It consists of an increased anion gap metabolic acidosis (pH < 7.3 or serum bicarbonate < 18 mmol/L), moderate ketonuria with a blood glucose levels <250 mg/dL. The most common cause is a recent use of a sodium glucose cotransporter 2 (SGLT2) medication. Other etiologies behind it include decreased calorie intake, recent use of insulin, alcohol consumption, chronic liver disease and glycogen storage disease[1].Case **Description**:The Patient is a 73-year-old female with a past medical history of Diabetes Mellitus, Hypertension, Hyperlipidemia, Hypothyroidism and deafness and muteness since birth. Patient had a recent ischemic stroke 5 days prior to the admission and was admitted at a different hospital for management of her stroke. Patient left against medical advice and presented to our ED later that day complaining of rectal prolapse. Of note, the patient is non-compliant with her medications including insulin and levothyroxine due to financial constraints. Upon admission, she is alert, oriented, and in acute distress. On her physical exam, her vital signs were within normal limits. Patient had a significant rectal prolapse with no other abnormalities seen on the exam. Lab values include glucose level of 170, Sodium of 135, HCO3of 15, Chloride of 103, albumin level of 2.9, Anion Gap of 18, Corrected-albumin anion gap of 20.8. Her lactate level was 0.81. We obtained serum Ketones that resulted in a moderate elevation and her urinalysis showed Ketone +2. She presented no osmolar gap with a serum osmolality of 295. Her Hba1c was 12.9 and her Thyroid studies showed TSH level 32, T3 Uptake of 53.3, Total T4: 4.6 and a Free T4 0.56. Other causes of a high anion gap metabolic acidosis were ruled out and the patient was diagnosed with an EDKA. Eventually, the patient underwent a surgical resection of the rectosigmoid region and was admitted to the ICU for EDKA management. Patient was started on Insulin drip and IV levothyroxine 50 mcg. The patient is still receiving management in the hospital upon writing this case presentation
Conclusion: EDKA is a diagnostic challenge as normal glucose level masks the underlying ketoacidosis. Therefore, a high index of suspicion is warranted. Altogether, our patient carries multiple risk factors for EDKA including poor oral intake, a recent stroke event

and poorly controlled Diabetes Mellitus. Patient was hospitalized right before her admission and suspected to have received a long-acting insulin during her stay causing her to be euglycemic. Our patient was also admitted with severe hypothyroidism, it's effect on development of EDKA is not well studied and suspected to also play a role in this patient's presentation[2,3].

Fecal Occult Blood Test (FOBT) efficacy in hospitalized patients

Baron Ekeledo, Juan Naranjo, MD, Jorge Duarte, Nazish Khan, Radhika Mehta, Fatimah Bello

Fecal occult blood test (FOBT) is one of the most popular diagnostic tools for screening colorectal cancer in the inpatient setting. Despite that, its outpatient use has been largely replaced by more advanced tools that decrease cost and increase sensitivity/specificity. This is essential when factors including diet and medications contribute to the low sensitivity and elevated false positive results FOBT demonstrate when detecting gastrointestinal (GI) bleeds.
This study aims to decrease the amount of FOBTs ordered in hospitalized and emergency room patients at Knapp Medical Center by 35-40% in 6 months via formal staff educational meetings. We hope that by conducting this study, we can gain knowledge regarding testing indications and their effect on patient care.

Gangrenous Appendicitis in an Elderly Male

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UTRGV-Internal Medicine Residency Program at Knapp Medical Center

Background: Appendicitis is one of the most common causes of acute abdomen with 250,000 cases reported annually in the U.S. Clinical manifestations include right lower quadrant abdominal pain, nausea, vomiting, and low-grade fever. However, in the elderly population they may present with atypical or non-specific symptoms of appendicitis.
Case Presentation: An 82-year-oldHispanic gentleman presents to the emergency department with chief complaint of epigastric pain, dizziness and vomiting after eating breakfast in the morning. He reports the epigastric pain is sharp, 4/10, radiating to the left arm with no alleviating or aggravating factors. Vitas on presentation showed a temperature of 98.6F, BP 108/50, heart rate 87, SpO2 94%. Labs revealed an elevated white cell count of 13.68, creatinine of 1.6, high sensitivity troponin of 105. An abdominal ultrasound was ordered which was unremarkable and CT abdomen and pelvis without contrast showing fluid filled distended loops of small bowel likely the result of an abdominal ileus. The patient continued to have worsening abdominal pain in the following days with physical exam now revealing rebound tenderness, guarding and signs of peritonitis. Leukocytosis worsened to 15.58 and surgery was consulted. The patient was taken for an exploratory laparotomy and was found to have a perforated gangrenous appendix.
Conclusion: One in every2000 adults over the age of 65 will develop appendicitis annually, making it an important cause of abdominal pain in this age group. The elderly have a higher rate of perforation at the time of presentation with one study stating that the mortality rate from perforated appendicitis in patients over the age of 80 was 21%. Elderly patient's may not present with the classic presentation of appendicitis as seen in this case and thus, a high degree of suspicion is needed to make a prompt diagnosis. Although it is a condition we mostly see in the younger population, it is important to keep appendicitis as a differential diagnosis in the elderly.

Generalized Lymphadenopathy as the Initial Presentation of a Young Woman with Systemic Lupus Erythematous

Mery Bartl

Background: Generalized lymphadenopathy (LAP) refers to abnormal enlargement of more than two non-contiguous lymph node regions. There are various causes of LAP, including malignancy, infection, autoimmune disorders, medications, and iatrogenic causes. Obtaining a thorough history and physical examination is paramount in identifying the underlying etiology. Most of the time further investigation with laboratory and radiographic studies should be performed to identify the cause. Patients with high-risk features should undergo a biopsy for the diagnosis of malignancy.
Case presentation: A 36-year-old lady with a remote history of COVID-19 presented with complaints of orthopnea, cough, arthralgia, and left-sided abdominal pain for the past two months. She denied associated B symptoms. On physical examination, her vitals were unremarkable; however, she had round, coin-shaped lesions over her MCPs and abdomen, alopecia, and generalized LAP. The initial workup was remarkable for anemia and leukopenia. CT scan of the abdomen and chest revealed bilateral inguinal, iliac, axillary, mediastinal, hilar, and retroperitoneal lymphadenopathy with bilateral pleural effusions. Due to malignancy suspicion a bone

marrow biopsy was pursued, which demonstrated leukopenia, no circulating blasts, and moderate normocytic anemia. Then the patient underwent an excisional biopsy of 3 lymph nodes that showed reactive follicular hyperplasia without malignancy. Infectious workup including blood cultures, respiratory cultures, HIV, hepatitis panel, Bartonella, Brucella, and tuberculosis was negative. Due to the evidence of leukopenia, anemia, serositis, lymphadenopathies, and polyarthritis, a diagnosis of systemic lupus erythematosus (SLE) was entertained. Further workup revealed ANA by immunofluorescence of 1:1280, anti-dsDNA 38, ESR 75 mm/hr, anti-U1RNP 40, C-reactive protein 1.4, complement C3 48, and complement C4 less than 5. Based on these findings, a diagnosis of SLE was made. The patient was discharged on prednisone 40 mg and hydroxychloroquine 200 mg daily and had remarkable improvement.

Conclusions: The prevalence of LAP in SLE ranges anywhere between 30-59% depending on the study. Although it is a common manifestation, it is not considered a criterion for the diagnosis of SLE. The presence of LAP typically correlates with a higher level of disease activity. This case highlights the importance of considering connective tissue diseases in the differential of patients presenting with LAP.

Granulomatous Mastitis: A rare or an underdiagnosed disease?

Shadi Jafari-Esfahani, Juan Naranjo, Christine Loftis

Introduction:

Granulomatous mastitis (GM) is a benign chronic inflammatory breast disease that is poorly understood, with no universal agreement on underlying etiologies and treatment protocol. The proposed etiologies include trauma, metabolic processes, hormonal changes, autoimmune disorders, and infections. This entity commonly presents with unilateral painful firm and erythematous breast mass, and less frequently with areolar retraction, fistula formation and ulceration. The disease is more common in Hispanic and Asian population. Due to its inflammatory nature, the mainstay of treatment includes a tapered course of high-dose corticosteroid, and methotrexate has proven to be effective in some cases.

Case Presentation:

A 47-year-old Hispanic woman presents to the office with a chief complaint of left tender red breast mass. She reports a similar episode in 2016, after a miscarriage, for which she was diagnosed with mastitis and underwent incision and drainage with subsequent resolution. She also reports one episode of breast mass associated with high fevers that resolved spontaneously. She denied fever, chills, weight loss, or breast discharge. The physical exam was remarkable for a 5 cm indurated tender left breast mass with surrounding erythema. Based on presentation, history, and physical examination the differential diagnosis included infectious mastitis, breast cancer, and granulomatous mastitis. Labs were remarkable for ESR of 51, RF 53. Mammogram demonstrated focal asymmetries of the left breast and ultrasound revealed one focus suspicious of abscess formation and another representing a resolving abscess with granulation tissue formation. A core needle biopsy of the mass was consistent with granulomatous inflammation. Patient was diagnosed with granulomatous mastitis and started on a course of antibiotic therapy with doxycycline and anti-inflammatory with celecoxib. On follow up, she reported significant improvement in her symptoms.

Conclusion:

The early diagnosis of GM may be challenging due to its clinical presentation and imaging findings mimicking other etiologies such as infectious or neoplastic causes. Therefore, it is important for physicians to keep a high index of clinical suspicion when evaluating a patient with such clinical presentations to make an early accurate diagnosis. The ultimate goal is to avoid unnecessary investigations and procedures which can cause emotional, physical, and financial burdens to the patient.

Hepatopulmonary syndrome: A case of unexplained dyspnea in a 22-year-old gentleman with liver cirrhosis

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BACKGROUND: Hepatopulmonary syndrome is a severe complication of end-stage liver disease characterized by triad of liver disease, intrapulmonary vascular dilatation, and arterial hypoxemia. Although the pathogenesis is not completely understood, pulmonary vascular dilatation occurs due to imbalance between vasodilators and vasoconstrictors. Liver injury is thought to increase end othelin production and cause bacterial translocation, causing increased nitric oxide production, causing vasodilation of pulmonary vasculature. History and physical examination are important in leading the physician to the correct diagnosis as the majority of these patients present with non-specific clinical manifestations and imaging. Identification of specific physicalexam findings is important in not missing key features of a patient's physical exam which will give you direction to a diagnosis of hepatopulmonary syndrome.

CASE PRESENTATION: We are presenting a 22-year-old hispanic male with past medical history of nonalcoholic steatohepatitis-related liver cirrhosis with evidence of portal hypertensive gastropathy with esophageal varices who presented with intermittent dyspnea and desaturation. Physical exam did not have overt signs of volume overload and was positive for platypnea and orthodeoxia. ABG revealed hypoxemia with PaO2 of 66 and orthodeoxia. Diagnosis of hepatopulmonary syndrome was confirmed with contrast Echo ordered which revealed normal ejection fraction and showed R to L shunting by agitated saline contrast. The patient was managed with medical and oxygen therapy. He was discharged home on oxygen therapy as he improved. Patient evaluated by a hepatologist outpatient and placed on the liver transplant list.
DISCUSSION: Hepatopulmonary syndrome can often be missed due to its nonspecific presentation. Dyspnea is its most common presenting symptom. However, being aware of other presenting symptoms are key to diagnosis; such as platypnea and orthodeoxia, as present in our case. Obtaining Echo with contrast is important as it will confirm the presence of an intrapulmonary shunt. Differentiating an intracardiac shunt vs intrapulmonary shunt is important. With an intracardiac shunt, contrast appears in the left heart within three heart beats after injection, however, with an intrapulmonary shunt, contrast appears in the left heart after three beats as in our patient. Once diagnosed, oxygen therapy is recommended. Liver transplantation is the only effective therapy.

Improvement of diabetic retinopathy screening of diabetic patients seen at the Internal Medicine Clinic
Jose Gomez Casanovas

Diabetic retinopathy (DR) is a leading cause of vision loss globally. The International Diabetes Federation (IDF) estimated the global population with diabetes to be 463 million in 2019 and 700 million in 2045. Retinopathy is a highly specific neurovascular complication of both type 1 and types 2 diabetes, and the prevalence strongly correlates to both the duration of diabetes and the level of glycemic control. The project was conducted at the Internal Medicine GME continuity clinic at Doctors Hospital at Renaissance in Edinburg Texas. he primary outcome was to achieve an increase in 30% in 3 months on diabetic eye screening properly documented on our EMR - Cerner. After intervention there was an increase in the percentage of properly updated charts of 2.38%, although the primary outcome of increasing 30% in documentation in EMR system was not achieved.

Improving colon cancer screening/referrals based on current guidelines in an underserved area outpatient clinic.
Juan Pablo Trejo

Background: In 2021 in the US there was an estimated 1.8 million new cases of cancer and 600,000 cancer death, that means 5200 new cases per day and 1670 deaths. CRC is the 4thmost common cancer diagnosed among adults and the 2ndleading cause of death from cancer. The ACS recommends that adults aged 45 years and older with an average risk of CRC undergo regular screening with either a high-sensitivity stool-based test or a structural (visual) examination, depending on patient preference and test availability. Screening with any one of multiple options is associated with a significant reduction in CRC.
Objectives: The primary objective was to show that the intervention of choice leads to an improvement of percentage of the appropriate colorectal screening significantly. We also, wanted to educate residents and improve awareness of current guidelines for CRC screening.
Methods: We designed a prospective, interventional study and compared the percentage of patients screened or referred for screening older than 45 years old, before and after the intervention over a six-month period. Inclusion criteria were all Hispanic and non-Hispanic, at the age of 45 to 75 seeing in the clinic from January 1st, 2021, to July 1st, 2021.The initial and primary intervention was as ground round about Colorectal cancer screening on 08/25/21. The secondary intervention were informative flyers at the dictation and conference room at the clinic about FOBTx3, FIT and Colonoscopy options for screening. The expected duration of project was a year.
Results: Pre intervention, the percentage of patients screened were about 50.09%, after our intervention the percentage increased to 60.49% with a p value of 0.0006

Mediastinal mass presenting as an ST-elevation MI
Oscar Lopez, Gabriel Lora Ferreira, Carlos Ceron Castro

Background: MINOCA is defined as a clinical syndrome in which there is myocardial ischemia in the setting of normal coronary arteries. Different causes include coronary spasms, SCAD, or external compression, e.g., by a mediastinal mass. CT or MRI would show presence of the mass, deferring any need for coronary angiography.

Case: The patient is a 57-year-old lady with a past medical history of hypertension who presented to the emergency department complaining of shortness of breath associated with chest pain. Upon evaluation her vitals were BP 126/76, HR 94, RR 18, O2 98% on room air. Physical exam was unremarkable. Troponin peaked at 0.62. Chest x-ray showed no acute findings. EKG showed ST-elevation MI in leads V1-V3. She was immediately taken to the catheterization lab and was found to have normal coronary arteries without any evidence of coronary artery disease. CT angiography was done to rule out pulmonary embolism which showed an anterior mediastinal mass with invasion to the anterior cardiac wall consistent with malignancy. Interventional radiology was consulted, and she underwent CT guided biopsy of the mass. The patient remained stable with no further symptomatology and was discharged home. Biopsy results showed mass consistent with diffuse large B-cell lymphoma, activated B-cell type, with an exceedingly high proliferative fraction. She was started on chemotherapy regimen.
Discussion: Primary mediastinal B-cell lymphomas are aggressive entities that can expand around the mediastinum and compromise the heart. Due to its cardiac invasion patients can present with an ACS picture. Coronary angiography would show no abnormalities. Aggressive chemotherapy regimen is pertinent in these patients due to the risk of myocardial rupture. Our case highlights the importance of viewing STEMI as a clinical syndrome with different etiologies and not just an EKG finding.

Necrotizing Fasciitis in a Patient with Type II Diabetes Mellitus - A Case Report
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Background: Necrotizing fasciitis (NF) is a rare necrotizing soft tissue infection (NSTI) of high mortality, clinically characterized by fulminant tissue destruction and systemic signs of toxicity. Clinical manifestations include erythema (72%), extended edema (75%), severe pain (72%), fever (60%), crepitus (50%), skin bullae, necrosis, or ecchymosis (38%). Worldwide, 1:3 of patients with NF die from this rapidly progressive infection.
Case presentation: A 44-year-old female patient with a past medical history of DM type II attended ER with pain in the right inguinal area. Vital signs on admission were heart rate 113bpm, blood pressure 124/82mmHg, and temperature 38.1℃. A physical exam revealed redness, swelling, and black eschar. There was crepitus and severe pain on palpation in the right inguinal area. The lab reported leukocytosis with WBC 14,800/Micro L and uncontrolled DM with a glucose level of 350 mg/dL and HbA1c >14 %: otherwise, unremarkable.
Abdomen/pelvis CT scan report indicated extensive pockets of gas plus soft tissue fat stranding seen in the right infra pubic region extending along the right perineum and into the medial aspect of the proximal thigh featuring necrotizing fasciitis. The patient was admitted, and sepsis protocol was initiated. Surgery was consulted, and the patient was taken immediately for surgical debridement, resulting in an open wound (27x12cm). Post-op the patient was transferred to ICU for close follow-up and later transferred to the surgical ward. During the hospital stay, wound cultures were positive for the Streptococcus viridian group in addition to a few Staphylococci coagulase-negative, most likely flora contaminants. No growth on blood cultures.
During the hospital stay, the open wound was managed by wound care consultants. Broad-spectrum IV antibiotics were continued during hospitalization, and the patient was later discharged with oral antibiotics.
Conclusion: Inadequate management of undiagnosed skin ulcers can rapidly progress in diabetic patients to Necrotizing Fasciitis due to immunosuppressed status and uncontrolled Diabetes Mellitus. Necrotizing Fasciitis has a high mortality rate and complications can range from chronic complex wounds to amputation. Adequate diagnosis with immediate medical and surgical treatment remains vital for decreased mortality and a higher recovery rate.

Patchy alopecia in a young adult with a generalized rash
Oscar Rodrigo Zamudio Herrera, Nevin Varghese

Background: Syphilis is a sexually transmitted infection that has been increasing in the United States. The prevalence of syphilis rose by 6.8% during 2019-to 2020. Secondary syphilis typically presents with a generalized maculopapular rash on palms and soles, however, can also have subtle dermatological findings such as alopecia. Syphilitic alopecia is an atypical manifestation of secondary syphilis, seen in 2.9 to 7% of the cases.
Case presentation: An 18-year-old Hispanic male presented to the clinic after noticing patchy loss of hair on the scalp for 2 weeks and one week of generalized non pruritic rash. His past medical history was unremarkable and there was no history of allergies. He denied alcohol, tobacco or illicit drug use. He reported having multiple sexual encounters with unknown female partners and denied consistent use of condoms. He also denied previous history of genial lesions or ulcerations. Physical examination revealed alopecia

as a moth-eaten pattern on parietal, temporal and occipital regions of the scalp. Further exam revealed symmetric macular-papular eruptions involving the trunk and the extremities, faint papular lesions on the soles but the palms were spared. Laboratory analysis revealed positive VDRL (1:156), reactive FTA-ABS and negative HIV serology. He was treated with penicillin G benzathine 2.4 million units for secondary syphilis, resulting in resolution of syphilitic alopecia and the rash.
Discussion: Secondary syphilis occurs in 25 % of patients with untreated primary syphilis infection. Primary infection could be asymptomatic or gone unnoticed as the ulcer is generally painless and heals spontaneously. Our patient presented with alopecia followed by generalized macular papular eruption. He was diagnosed and treated for secondary syphilis. Syphilitic alopecia is an uncommon manifestation and occurs as a non-cicatricial alopecia in 2.9% of cases. The presentation is subtle and might be underdiagnosed. It may present as patchy alopecia in a moth-eaten pattern, diffuse alopecia or mixed form. Syphilitic alopecia can also involve eyebrows, or beard, not seen in our case. Generally, alopecia improves with treatment of syphilis. Syphilitic alopecia should be considered in the differential diagnosis of alopecia in a patient with high-risk sexual behavior.

Patent foramen ovale, deep venous thrombosis and stroke; a paradoxical embolism in an 80-year-old male
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Background: A patent foramen ovale (PFO) is a congenital cardiac malformation describing a shunt in between the atrial walls. The overall incidence of a PFO is around 27.3% with a progressive decrease to 25.4% in the 4thand 8thdecades. Once it has been established that a patient with an ischemic stroke/transient ischemic attack (TIA) has a PFO and other sources of the stroke have been ruled out, it is imperative to consider deep vein thrombosis (DVT) as the source of a paradoxical embolus.
Case Presentation: 80-year-old gentleman with a history of right internal carotid occlusion of 80-90% status post right internal carotid endarterectomy. Presented to the emergency department (ED) for sudden left-sided weakness, left facial droop, slurred speech, and dizziness. Upon initial evaluation he was asymptomatic; NIH stroke score 1. Magnetic resonance imaging of the brain showed important watershed infarcts. Cerebral angiogram found 50% concentric stenosis of the right middle cerebral artery (MCA) with minimal lineal filling defect in the stenoticsegment. The filling defect cleared after injection of intra-arterial integrillin. Post procedure, patient was started on heparin drip. Cardiology was consulted for suspected paroxysmal atrial fibrillation and a transesophageal echocardiogram (TEE). Two days after the post cerebral angiogram, the patient began to complain of severe right leg pain. He was noted to be tachycardic and hypoxemic. The venous doppler of the leg revealed a DVT and subsequent CT chest angiography revealed bilateral pulmonary embolism (PE). TEE results showed a positive agitative saline test with defect in the intra-atrial wall. The patient was on heparin drip and transitioned after 7 days to oral anticoagulation. Loop recorder was installed with possible PFO correction by cardiology in the outpatient. Patients' symptoms improved and he was discharged to inpatient rehab. ConclusionAlthough rare a paradoxical embolus should be considered in patients presenting with a stroke/TIA, PFO, and an unidentified source of embolus. Although this patient did have 50% occlusion of the R MCA, we cannot fully exclude a PFO-related stroke. The discovery of a DVT, and bilateral PEs supports the high suspicion for PFO-related stroke in the form of paradoxical embolus.

Patient Safety Workshop: A Graduate Medical Education Interprofessional Simulation Half Day
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Introduction: As per the National Academy of Medicine ,patient safety is considered indistinguishable from the delivery of quality health care, and is referred to as the foundation upon which all other aspects of quality care are built. Throughout the years, graduate medical education (GME)across the world has evolved to ensure the training of future medical professionals includes exposure to many of the elements that compose patient safety, such as implementing root cause analysis, systems thinking, and disclosing adverse events. University of Texas Rio Grande Valley (UTRGV) is the sponsoring institution for 19GME programs across different specialties. As part of the orientation for their respective residencies, the GME office designed a workshop to introduce patient safety concepts and skills. We conducted a quality improvement project to assess the workshop and identify strengths and areas for improvement.
Methods: The GME Office, with chief residents, program leaders and pharmacy faculty, developed and delivered a multidisciplinary simulation workshop involving internal medicine, family medicine, general surgery, psychiatry, and pharmacy residents spanning 4 hours during resident orientation period June 21-23, 2022. We created groups of 4-6learnerswith mixed disciplines. Interventions focused on: (1) root cause analysis; (2) disclosure of patient safety events; (3) identifying patient safety hazards in the inpatient

setting; (4) interdisciplinary communication skills. The workshop will include the use of small-group discussion, mannequins, reflection and role modeling. Participants will complete an anonymous pre and post survey to determine the effect of the workshop and seek improvements in GME at UTRGV.
Discussion: Patient safety training and education of health care professionals have not kept pace with advances in patient safety or workforce requirements. Internal and national surveys show that residencies struggle to meet competencies in patient safety, quality improvement, and accountability as required by the ACGME. This inaugural UTRGV GME Office patient safety interprofessional simulation workshop attempts to address and enhance the knowledge and confidence surrounding patient safety concepts.
Results will include and pre and post survey evaluations of the workshop and identify next steps.

Prevalence Comparison of Accompanying Lesions Between Primary and Recurrent Anterior Dislocation in the Shoulder
CHANGHO YI

Background: Many authors have reported the presence of intra-articular lesions after primary dislocation of the shoulder joint. However, few studies have focused on their prevalence or the differences in accompanying lesions between primary and recurrent dislocations of the shoulder joint.
Purpose: This study was undertaken to investigate and analyze accompanying lesions, including types of anteroinferior labrum injuries, using diagnostic arthroscopy and magnetic resonance arthrography (MRA) in 144 patients with traumatic anterior dislocation
of the shoulder joint.
Study Design: Cohort study; Level of evidence, 3.
Methods: There were 33 patients with 33 dislocations in the primary dislocation group and 111 patients with 111 dislocations in the recurrent dislocation group. Preoperative magnetic resonance arthrography and diagnostic arthroscopy were performed on all patients.
Results: In the primary dislocation group, 8 Bankart lesions, 9 free anterior labrum periosteal sleeve avulsion (ALPSA) lesions, 4 bony Bankart lesions, and 1 adhesive ALPSA lesion were observed. In the recurrent dislocation group, 68 Bankart lesions, 11 free ALPSA lesions, 13 bony Bankart lesions, 16 adhesive ALPSA lesions, and 1 glenoid articular rim disruption lesion were found. There were 22 (66.6%) and 109 (98.1%) patients with lesions in the anteroinferior labrum in the primary and recurrent groups, respectively. There was a statistically significant difference between the 2 groups (P 5 .002). Also, there was a significant difference between the 2 groups in the prevalence of the Hill-Sachs lesion and inverted pear-shaped glenoid lesion (P 5 .008/P 5 .047). Inverted pear-shaped glenoids were observed in 15 patients in the recurrent group. In 139 of 144 patients, surgical findings of accompanying lesions coincided with magnetic resonance arthrography findings (96.5%).
Conclusion: Various forms of anteroinferior labral lesions were seen in patients with traumatic anterior dislocation of shoulder. The recurrent dislocation group showed a significantly higher prevalence of anteroinferior labral lesions and bony lesions in comparison
with the primary group. In our study, magnetic resonance arthrography was an accurate method to assess accompanying lesions in first-time and recurrent anterior dislocation of the shoulder, suggesting that this may be a useful tool for determining a treatment method.

QI in Resident Leadership Workshop
Pareja HY, MD1, Chang CH, MD, FACP2,3, Aragon D, MD2, George D, PhD4
1UTRGV-MMC Family Medicine Residency Program2UTRGV-DHR Internal Medicine Residency Program3UTRGV-Asst. Dean of GME & Asst. DIO 4UTRGV-DHR Family Medicine Residency Program

Background: Many residency programs provide some type of leadership training for chief residents. As these emerging leaders transition into their role, it is imperative to provide them with skills and knowledge to help them develop their leadership style. UTRGV's department of Graduate Medical Education(GME)organized their first "Resident Leader Workshop" for all rising Chiefs and GME Resident Leadership Council (RLC) members. Using a pre and post survey, participants provided feedback on the effectiveness of knowledge and skills presented during the workshop.
Methods: All residency and fellowship rising Chiefs and GME RLC members were invited. The workshop took place on May 25, 2022. It was a live event from 12:00-5:00pm at the School of Medicine Learning Center. The following topics were covered during the workshop: Middle Management Principles and Role Analysis, Well-being and Resilience, Personality Styles, Feedback, Conflict

Management, and Leadership Tips. Participants completed pre and post surveys that were created on Qualtrics and delivered with QR codes. Time was allotted during the workshop to complete the surveys. Results analyzed from de-identified data from participants on their perception of effectiveness, strengths, and suggestions for improvement are presented below.
Results: A total of 14 participants(5 females, 8 males, 1 gender variant/non-conforming), representing 11 residencies and 2 fellowship programs were present and completed the surveys.4 participants had some type of previous training in leadership. In both the pre and post surveys, administrative was ranked as the top responsibility and clinical was ranked as the least responsibility of a leader. Participant responses indicate an increase in preparedness and confidence in starting their roles as leaders and managing conflict. They ranked personality styles, feedback, and conflict management as the "most beneficial" topics. Additional analysis will be completed from the data to better document their responses and to inform next steps in leadership development at UTRGV GME.
Conclusions: The workshop helped the emergent leaders increase their confidence and preparedness in starting their new role as leaders and managing conflict. The workshop was effective, and the participants reported high satisfaction with the programming. Our goal is to continue providing leadership development.

Quality Assessment of the Wellness Committee
Cameron LanCarte, Deepu George

The purpose of the University of Texas Rio Grande Valley (UTRGV)-Doctors Hospital at Renaissance (DHR) Family Medicine Residency Program's (FMRP) Wellness Committee (WC) was aimed at improving resident wellbeing as measured by the annual ACGME well-being survey. In 2021, residents reported higher rates of illbeing in this survey, potentially influenced by the COVID-19 pandemic. Specifically, resident responses to the following items fell below the national average: fostering a supportive environment by the program, feeling emotionally drained, and needing more recovery time. (See Graph 2)The WC hypothesized that the following elements are critical in improving resident wellbeing: a definitive wellness goal, consistent wellness focused activities, and improvement of peer-to-peer cohesion.
The WC is made up of 4 faculty members and 8 residents. Recognizing the missing elements in our environment, we began to problem solve by creating a collective wellness-oriented goal to guide and structure our programming for the year. The WC, then, created a calendar of scheduled events. Each activity was designed to promote, inspire, and/or educate the enhancement of mental and physical wellbeing. The wellness calendar had reoccurring monthly and annual events. Faculty and Residents were routinely informed about each event through a digital Wellness Calendar. The Wellness Calendar also included information such as birthdays to foster common points of reference among the residents and faculty. Participation was highly encouraged with reminder emails sent monthly.
Overall, resident wellbeing improved in 2022 based on the annual ACGME Wellbeing Survey from 2021. Specifically, in fostering a supportive environment which was found above national average (3.8 vs 3.6). Residents disagreed more with statements of feeling emotionally drained (76.2%), needing more recovery time (66.8%), and increased post-work fatigue (66.7%). Additionally, residents agreed that events and strategies organized by the WC were inspiring (94%), promoted wellness (100%) and taught wellness (88%). The next step of development is to enrich the content found in the calendar to further allow residents to overcome workplace exhaustion.

Socio-contextual Factors Predicting Pericardial Effusion and Mortality in Patients with Confirmed SARS-CoV2 in a South Texas Hospital. A Preliminary Analysis
Nina Shyama Appareddy MD, Cesar Peralta MD,Juan Carlos Alvarenga MD DSc, Charles Mild MD FACS

Introduction: Few pericardial effusion (PEf) cases have been reported in the literature amongst adult hospitalized patients with SARS-CoV2. The goal of our study is to determine the frequency and risk factors of PEf amongst adult hospitalized patients with SARS-CoV2 and its effect on mortality.
Methods: This preliminary analysis included 48 consecutive patients with confirmedSARS-CoV2 admitted from 08/01-08/31/2021. Socio-demographic data and risk factors for coronary artery disease were recorded. Echocardiography was reviewed for evidence of PEf. A comparison of patients with effusion, no effusion, and no echo was performed with chi-square,t-test, ANOVA, and probability of death using logistic regression with Stata v17.
Results: The sample was characterized by a mean age of 59.7 (SD:16.3), BMI 34.3 (SD:7),females 52%, Hispanic 87%, diabetes mellitus 46%, dyslipidemia 46%, and hypertension 54%.Of the 13 (48%) patients who had echocardiography performed, there were 7 (44%) who showed PEf. The univariate analysis in those with echocardiogram showed no association ofPEf with any of the studied

variables. PEf was higher amongst patients living in zip codes which have a higher percentage of individuals living below the federal poverty line (pov) (25.1±0.88 vs21.2±1.2, p=0.036). PEf had mortality OR 4.8 (95%CI: 1.01, 24.9; p=0.05). There was no interaction between PEf and pov to predict mortality.
Conclusion: Presence and diagnosis of PEf in patients with SARS-CoV2 may represent an additional risk factor for poor outcomes in an already health disparate population. Clinicians should maintain a high index of suspicion for this condition.

Spectral Doppler Ultrasonography of Hepatic Vein in a Patient with Atrial Fibrillation and Rapid Ventricular Rate.
Hector Arredondo

Background:
Point of care ultrasound (POCUS) is a tool that enables clinicians to objectively assess hemodynamics at the bedside. Recently, a novel concept of venous excess Doppler ultrasound (VExUS) grading system has been proposed to assess venous congestion at the organ level in real time. This score evaluates the presence of severe flow abnormalities in 2 or more veins (of the hepatic, portal, and kidney parenchymal veins) with a dilated IVC (2 cm). In addition, there are reports in the literature that tachyarrhythmias alter the flow pattern in the hepatic veins.
Case presentation:
We present a case of a 88-year-old gentleman with a past medical history of hypertension, paroxysmal atrial fibrillation, CKD, and diabetes, who was admitted to the hospital due to sepsis in the setting of multifocal pneumonia. On admission day 3, the patient developed atrial fibrillation with a rapid ventricular response. A bedside POCUS was performed as part of the evaluation. Hepatic vein doppler flow showed complete S wave reversal suggesting high right atrial pressures (RAP) and severe intravascular congestion. Diltiazem infusion was started immediately, and diuretics were ordered. Rate control was achieved after 1 hours of diltiazem infusion. Reassessment of hepatic vein Doppler flow showed normalization of S wave with an S > D pattern. A decision was made to discontinue diuretics as S wave reversal was attributed to the tachyarryhtmia.
Conclusions:
VExUS grading is a novel concept, that evaluates intravascular congestion based on IVC diameter, hepatic, portal, and kidney veins Doppler waveforms. Awareness of hepatic vein doppler alterations in tachyarrhythmias allows one to avoid misinterpretation of the hepatic vein signal and permits assessment of the impact on right heart hemodynamics.

SUBTOTAL ILIAC VEIN OCCLUSION SECONDARY TO MAY-THURNER SYNDROME
Shyama Appareddy

Background: May Thurner Syndrome (MTS), an anatomical variant present in over 20% of the population, can present with iliofemoral deep venous thrombosis (DVT) caused by compression of the common iliac vein by the adjacent iliac artery. **Case:** An 86 year old male with coronary artery disease presented with left lower extremity swelling. Ultrasound revealed acute iliofemoral region DVT. This clot, extending from the groin to the ankle, placed him at high risk for pulmonary embolism and post-thrombotic syndrome.
Decision-making: Patient was placed on heparin drip. Venogram performed at 48 hours showed extensive clot in the superficial femoral, common femoral and external iliac vein. The popliteal vein was accessed with an 8-french sheath. Using Inari, 90% of the clot was retrieved through the popliteal vein. Repeat venography revealed nearly complete resolution of the clot in the superficial femoral vein from the entry point into the common femoral vein. Ultrasound showed >80% compression remaining in the common iliac and external iliac vein. The iliac vein was dilated with a 14.0 balloon. Stents were placed in the distal portion of the external iliac vein and common femoral vein. Final angiography revealed excellent flow in the iliac vein.
Conclusion: Our patient presented with proximal DVT with an underlying etiology of iliac vein subtotal occlusion secondary to MTS, a widely prevalent and frequently overlooked condition with consequential unnecessary long-term anticoagulation.

TAKING THE LOAD OFF: DEVICE LEAD-INDUCED SEVERE TRICUSPID REGURGITATION AND RIGHT-SIDED HEART FAILURE TREATED WITH TRANSCATHETER AORTIC VALVE IMPLANTATION (TAVI)
Shyama Appareddy

Background:

Interference of device leads with closure of the tricuspid leaflets can cause severe tricuspid regurgitation (TR) and right-sided heart failure, as can heart failure with reduced ejection fraction (HFrEF) and left sided valve disease. We report a case treated with transcatheter aortic valve implantation (TAVI) with improved TR.

Case:

A 78-year-old male with coronary artery disease status post remote myocardial infarction and coronary bypass, HFrEF with left ventricular ejection fraction 35-40%, and inducible ventricular tachycardia status post AICD placement presented with worsening dyspnea on exertion, easy fatigue, lower extremity edema, anasarca and abdominal bloating. Transthoracic echocardiography demonstrated severe aortic stenosis with secondary pulmonary hypertension, a right ventricular (RV) systolic pressure of 50 mmHg, severe bi-atrial enlargement, and severe TR in the region of his device lead. Transesophageal echocardiography confirmed mechanical interference by the lead with closure of the tricuspid septal leaflet.

Symptoms were refractory to diuretics. He was a poor candidate for lead extraction given fibrotic changes. Tricuspid valve (TV) replacement was high risk given prior bypass surgery with patent grafts. TAVI was performed to reduce pulmonary artery pressures, with concomitant guideline directed medical therapy (GDMT) for HFrEF to reduce tricuspid regurgitation from RV pressure overload from left sided heart disease. Repeat echo showed a reduced RV systolic pressure of 42 mmHg, with his TR improved to moderate to severe.

Conclusion:

While diuretics are the mainstay of therapy, medical therapies for management of severe TR are limited. Attention should be focused on the underlying etiology of the TR and classification as primary (abnormal valve leaflets-including device lead induced) or secondary (normal valve leaflets). Our patient had mixed involvement. Management was directed accordingly with TAVI and GDMT for HFrEF, with plans for the higher risk surgical TV repair or replacement should symptoms persist.

Takotsubo Cardiomyopathy, presentation as a cardiac arrest in a 67 year old female with depression and anxiety history

Blesset Alexander, Joseph Caporusso

Background: Takotsubo cardiomyopathy, also known as broken heart syndrome or stress induced cardiomyopathy or apical ballooning syndrome, is defined as sudden

transient reversible cardiac syndrome which presents as dramatic left ventricular apical akinesis and mimics acute coronary syndrome, was first described in Japan in 1990 by Sato et al. Emotional or physical stressor is considered as a trigger, although exact etiology of syndrome is still unknown.

Case: A sixty-seven year old Hispanic woman with past medical history of depression and anxiety, presented to the emergency department due to generalized body weakness and chronic severe lower back pain. In the emergency department, patient experienced a cardiac arrest with return of spontaneous circulation

achieved after five minutes. Her initial Echocardiogram revealed a large area of akinesis involving mid anteroseptal, lateral wall, inferoapical, severe left ventricular dysfunction with ejection fraction 30-35% (Figure 1).

Her repeat echocardiogram done three days later revealed improved left ventricular systolic function with estimated ejection fraction of 45-50% (Figure 2). The patient underwent a left heart catheterization which demonstrated no significant obstructive coronary disease (Figure 3) .

Our patient has a history of anxiety and depression, which can be considered precipitating factors predisposing patient to a stress-induced cardiomyopathy.

A TALE OF TRAVELING IN A STEALTH MODE

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Background: Melanoma is an aggressive malignancy that tends to form metastases in the brain. The nature of metastatic melanoma with unknown primary is poorly understood and has only theoretical assumptions. Less than 10% of melanoma cases present with an unknown primary tumor location.

Case presentation: A 68-year-old Caucasian male patient, Canadian citizen, presented to the hospital with left-sided weakness and deviation of right side of angle of mouth for three days. Pertinent positive physical signs were motor weakness of left upper and lower extremities. Labs were unremarkable. CT-scan of the brain showed right temporal lobe lobulated masses associated with vasogenic edema, mass effect, and leftward midline shift, confirmed with MRI, which showed a large 5.4 x 4.2 cm complex right temporal lobe mass. Intravenous dexamethasone and intravenous levetiracetam were started. CT-scan of the chest, abdomen, and

pelvis was negative for any suspicious lesion. A positron emission tomography scan showed no suspicious hypermetabolic activity. The patient underwent stereotactic right temporal craniotomy with volumetric resection of the tumor and magnetic resonance image-guided, computer-assisted stereotactic volumetric resection of the right temporal intra-axial lesion and duraplasty by the neurosurgical team, without any complications. Intraoperatively the lesion was noted to be violaceous, whitish, granular, and encapsulated. Later, he also underwent revision of craniotomy and gross total tumor resection under neuronavigation. Histopathology described the tissue from resection as a malignant melanoma, with tumor cells staining positive for vimentin, SOX-10, HMB-45 and MART-1. Despite an extensive evaluation by oncology and dermatology, no primary cutaneous lesion could be found. The patient received palliative radiation therapy with a total dose of 3000 cGy delivered over ten fractions. During his therapy, no significant side effects were observed. He was started on intravenous nivolumab. As the patient was a Canadian citizen, he moved back to Canada for further treatment.
Conclusion: Our patient represents an example of malignant melanoma with an unknown primary. The current literature suggests that about 2–3% of all malignant melanoma patients present with a metastasis without a detectable primary tumor. Spontaneous regression of the primary lesion remains a plausible explanation of malignant melanoma with unknown primary.

That Which Keeps on Giving - A Case of Class IV Diffuse Proliferative Lupus Nephritis in a Hispanic Woman with underlying Systemic Lupus Erythematosus

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Background: Glomerulonephritis is the primary cause of morbidity and mortality of systemic lupus erythematosus (SLE). Lupus nephritis is characterized by immune complex deposition in the mesangium leading to complement activation and hypocomplementemia. Studies show that up to 60% of adults with lupus develop renal involvement and it has been well established that Hispanic patients show poorer outcomes than Caucasians despite advances in treatment. Preserved kidney function with new-onset proteinuria should raise clinical suspicion for acute lupus nephritis. Further evaluation with a kidney biopsy is paramount in establishing a diagnosis, helping to define treatment strategy, and determining response to treatment.
Case Presentation: A 41-yo-Hispanic-Woman with a PMH SLE without previous renal involvement, secondary Sjogren's, hypertension, heart failure and cirrhosis presented to the ER with a worsening SOB, difficulty swallowing, and anasarca over two weeks. On evaluation, the patient was hypertensive, tachypneic, had positive JVD, wheezing in lung bases, +1 pitting edema in the lower extremities and skin hyperpigmentation on the face, neck, and upper extremities. Laboratory studies revealed leukocytosis of 11.1 th/uL, Hgb 10 gm/dL, platelets 192 th/uL, Cr 0.9 mg/dL, BUN 17 mg/dL, bicarbonate 19 mmo/L, sedimentation rate 94 mm/hr, and CRP 4.5 mg/L. A urinalysis was performed, which showed 3+ proteinuria with hematuria with a subsequent protein to creatinine ratio demonstrating 2,000 mg/gm. The workup for nephritic range proteinuria revealed an ANA 10U, anti-dsDNA 2.7 IU/mL, negative ANCA, anti-cardiolipin Ab IgM <12 MPL, anti-cardiolipin Ab IgG 14 GPL, and non-reactive HIV, Hepatitis C, and Hepatitis B panels. Despite negative glomerulonephritis workup including anti-dsDNA antibody, a kidney biopsy was pursued and revealed class IV diffuse proliferative lupus nephritis with a component of thrombotic microangiopathy.
Conclusion: Kidney biopsies are imperative when establishing a cause of new-onset proteinuria in a patient with a history of SLE. The goal of treatment is induction with immunosuppressive agents to reduce kidney inflammation promptly and prevent flares, decreasing the long-term risk of renal failure. Despite early recognition strategies and advances in treatment, Hispanic patients are likely to be diagnosed with more severe disease at presentation, specifically with class IV or V lupus nephritis. Subsequently, these patients are more likely to develop chronic renal failure compared to Caucasian patients. This case highlights the importance of screening urinalysis for proteinuria for early detection of renal involvement in patients with SLE.

The Importance of a Broad Differential Diagnosis: Hepatitis C Virus Associated Cryoglobulinemic Vasculitis

Shadi Jafari-Esfahani, Christine Loftis , Juan Naranjo

Introduction:
Mixed cryoglobulinemia syndrome (MCS) is a systemic inflammatory syndrome affecting small-medium sized vessels due to the presence of type II or III cryoglobulins in the serum. MSC can manifest as systemic vasculitis with symptoms varying from weakness, arthralgia, palpable purpura, peripheral neuropathy, and renal involvement. The most common cause of MCS includes lymphoproliferative disorders, autoimmune diseases and viral infections, with hepatitis C virus (HCV) being the most common etiology.

Case Presentation:
A 60-year-old lady was referred to our office for evaluation of rheumatoid arthritis. She reported history of bilateral thumb pain, bilateral knee pain associated with episodes of swelling, warmth, and erythema, and left shoulder pain resulting in restricted range of motion. Further, she reported new onset of slightly painful and itchy skin lesions on her arms bilaterally for one year associated with onset of chemotherapy for treatment of colorectal cancer. She denied fever, chills, fatigue, weight loss, hearing loss, dry, red or painful eyes, nasal or oral sores, epistaxis, Raynaud phenomenon, shortness of breath, chest pain, hemoptysis, dysphagia, hematemesis, hematochezia, and hematuria. Physical examination was significant for red non-blanchable lesions on bilateral legs and feet without ulceration, bilateral tenderness of carpometacarpal joints, and left shoulder tenderness with restriction of range of motion. Patient had a skin biopsy which had revealed leukocytoclastic vasculitis. Differential diagnoses included rheumatoid vasculitis, IgA vasculitis, Cryoglobulinemia, and ANCA related vasculitis. The patient was empirically started on Prednisone 40 mg daily to be titered down. Work up revealed elevated liver enzymes, positive cryoglobulins, cryocrit more than one percent, positive ANA with nuclear speckled pattern with a titer of 1:80, and reactive HCV antibody. Based on history, physical examination and lab findings, a diagnosis of HCV induced cryoglobulinemic vasculitis was made.
Conclusion:
In the context of biopsy proven leukocytoclastic vasculitis, a broad differential diagnosis including systemic causes of vasculitis should be undertaken. MCS associated with HCV is a severe form of the disease with a 5-year mortality rate of 25 percent. Therefore, it is of utmost importance to make an accurate diagnosis and initiate the appropriate treatment to improve the quality of life, reduce complications and the mortality.

Fellow/ Postdoctoral Researcher Category

DPYD pathogenic variants associated with fluoropyrimidines toxicity
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Background: Genetic variants in dihydropyrimidine dehydrogenase gene (DPYD) coding for the key enzyme (DPD) of fluoropyrimidines (FPs) catabolism. DPYD contributes to the development of severe FPs-related toxicity, and pathogenic DPYD variants detection reduces side effects and complications associated with FP-toxicity. The allelic frequency of these variants in the Mexican population is currently unknown.
Methods: The study was carried out at the Centro Universitario Contra el Cáncer (CUCC) of the Universidad Autónoma de Nuevo León (UANL) in Monterrey México. Genomic DNA was isolated from 154 subjects using the QIAamp DNA Blood Midi kit (QIAGEN) following the manufacturer's recommendations. We analyze the variants c.1156G->T, c.2846A->T,and c.1129-5923C->G by qPCR using predesigned probes. For the remaining genomic variants (c.1905+1G->A, c.1679T->G, c.1898delC andc.299_302delTCAT),we design sequencing oligos using the software Oligo Primer v.7®. The allele frequency was calculated for each variant.
Results: We analyzed a total of 154 samples to detect the seven variants analyzed. So far, only 2 samples have been found that presented the variant c.1129-5923C>G in a state of heterozygosis, representing 1.2987% of the total of our population.
Conclusions: The allele frequency for the variant c.1129-5923C->G was higher than reported in other populations. So this allele is more common in our population, which could attribute to the large percentage of side effects in our patients. However, more studies and increasing the number of samples are needed to establish DPYD the allele frequency more precisely.

Representation of Racial and Ethnic Minorities and Their Preferences for Mood Stabilizing Treatment Selection for Bipolar Disorder: A Systematic Review

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Background: The use of second-generation antipsychotics for bipolar disorder (BD)has increased in the past years1Concerns on potential serious medical side effects and need for blood level monitoring of some traditional mood stabilizers along with other factors have influenced this change. Shared decision-making (SDM) strategies have been implemented in clinical settings due to their ability to engage patients in the process of treatment selection.2Within minority groups with mental illnesses, socioeconomic factors, individual concerns, and cultural variations in clinical presentations, are often overlooked or misrepresented when assessing the patient's treatment preferences. Although several studies evaluating the effectiveness of SDM interventions in BD, the representation of patients that belong to minority groups and how their preferences and outcomes differ from those belonging to non-minority groups is unknown. The primary aim of this is to assess the inclusion of minority patients in studies assessing SDM strategies in patients with BD.
Methods: After the systematic search, screening and data extraction will be conducted in a duplicate and independent manner. We will include interventional studies implementing strategies for SDM in patients diagnosed with bipolar disorder. Data on the proportion of minorities included in the studies, as well as on quality indicators for the clinical encounter regarding SDM, treatment adherence, and clinical outcomes will be extracted.
Results and Conclusion: We have no results yet, but the relevance of the expected results is discussed. Compared to non-Hispanic white patients, patients from minority racial/ethnic groups have lower odds of receiving classic mood stabilizers and higher rates of antipsychotic prescription.3Patients that belong to minority groups are also at higher risk of misdiagnosis -with subsequent delay in the diagnosis-, and of mistreatment.4These disparities have been associated with potential cognitive biases that lead to symptom misattribution, inadequate treatment regimens and omission of patient's sociocultural background.5Patient-centered care could also benefit the assessment of risk factors that are common to specific groups (e.g., metabolic risk in Hispanic patients).6,7Moreover, SDM can help understand better the values, preferences for treatment choices and help evaluate if patient engagement can be translated into clinical benefits and an improved quality of life.

A Case Report of a Primary Cerebral Abscess due to Nocardia Asteroides in an Immunocompetent patient.
Ileana Mendez

Background: Brain abscesses caused by Nocardia are rarely reported and have high mortality. It usually affects patients who are immunocompromised and initiates as a lung infection that disseminates hematogenously, though it can also affect those immunocompetent. Cerebral nocardiosis imitates brain tumors, which can delay the initiation of the appropriate antibiotic therapy.
Case Description: We present a case of a 64-year-old immunocompetent male with multiple cerebral abscesses who presented with headaches, left-sided weakness, and ataxia. Upon imaging, multiple brain lesions were revealed. The patient underwent craniotomy and drainage of the mass. He was initially empirically treated, though cultures later grew Nocardia Asteroides. He was initially treated with Meropenem and Bactrim, but was discharged on Bactrim alone once the sensitivities came back resistant to meropenem. The patient was discharged on Bactrim alone to complete 12 months of treatment. He had a full recovery one-month post-surgical and antimicrobial intervention.
Conclusions: Due to the high mortality rates associated with Nocardia brain abscesses, clinical suspicion should always be high for Nocardia. Early surgical intervention and identification of the species are paramount to initiating long-term antibiotic therapy. In our experience, a successful outcome was achieved with total resection and prolonged and adequate antibiotic therapy.

ALZHEIMER'S DISEASE STUDIES IN THE TEX-MEX BORDER: DISSECTING A COMPLEX MULTIFACTORIAL PROBLEM
Ney Alliey-Rodriguez

PURPOSE:
Alzheimer's Disease is the leading cause of dementia in the aging population, and Latinos have 3 to 5 times more risk to develop dementia than the overall US population. Although several studies have examined for possible causes of this increased risk, lack of comprehensive information plus a reduced number of Latino samples available in each study have hindered the answers.
DESCRIPTION:
The University of Texas Rio Grande Valley has joined two large studies looking for multiple biomarkers associated with ALZ: The South Texas Alzheimer's Center Clinical Data Repository and Biobank (STAC) and the Texas Alzheimer's Research and Care Consortium (TARCC). We are currently collecting clinical data along with neuroimaging and lab biomarkers from each individual enrolled in these studies, with the aim to enroll a large majority of Latinos in our site sample, which will help to elucidate the differences and risk factors inherent to our population in the border. We are also analyzing data from different Latin-American studies to study specific genetic risks, environmental factors, and their interactions.
PARTNERS:
UTRGV has partnered with UTHSCSA to report with the South Texas Alzheimer's Disease Research Center (ADRC) to the National Alzheimer's Coordinating Center (NACC), and with other Texas academic research institutions to the Texas Alzheimer's Research and Care Consortium (TARCC). We aim to provide experiences of clinical training to our medical and psychology students and for residents of medical specialties, as well as analysis opportunities and opening postdoctoral positions related to the development of this field at UTRGV.
LOOKING AHEAD:
We expect to generate substantial contributions to the knowledge of cognitive decline in underserved populations, which can lead to improved prevention, treatment and clinical care. Postdoctoral positions will be opening soon at the Institute of Neuroscience.

Can alternative medical methods evoke neuro-functional somatosensory responses? A case study suggesting functional improvement.
Christine Gerin

Somatosensory pathways act as the avenue in transferring information concerning the body and its interaction with the external environment to the brain. We aim to demonstrate that through studying somatosensory, motor cortical and subcortical networks, we can explain functional recovery after stimulations applied as an alternative medical treatment. Those stimulations might have evidenced neural pathways and networks important in recovery of function.
Whether lesions included prefrontal cortical areas, or motor and sensory areas, the alternative treatment triggered existing or new neuronal networks as well as synaptic efficiency or reactivation, through highly increased, sensory nociceptive

coupled to proprioceptive, afferences. Those results highlight the need to further investigate neural function of cortical and subcortical areas through non-invasive and indirect pathways stimulations, during a stable chronic phase after a CNS insult.

Clinical and social profile of patients with pulmonary tuberculosis in Reynosa Tamaulipas.
Selena Zavala-Perez, Juan Carlos Hernandez-Martinez

Tuberculosis is an infectious disease caused by Mycobacterium tuberculosis. It generally causes pulmonary tuberculosis. In 2020, the total number of tuberculosis cases worldwide was about 9.8 million, with a mortality of 1.5 million. In Mexico, pulmonary tuberculosis represents 79% of the total cases of tuberculosis, with an incidence of 24 cases per 100,000 inhabitants. Tamaulipas ranks fifth nationally.
This observational and descriptive study seeks to determine the frequency in which social and risk factors occur in our population with tuberculosis. Data was collected from patients with active pulmonary tuberculosis, from February to May 2022 through the clinical history of the center.
In the 50 records included, 58% were men, the mean age in our population was about 38.4 years ± 16.6 SD, 56% of the participants were from the state of Tamaulipas, followed by Veracruz and San Luis Potosí. The predominant level of education was middle school, while the occupation that prevailed was unemployed and housewife.
Among the frequent symptoms were productive cough and fever. In the comorbidities presented, diabetes mellitus stood out in the 30%, while in the addictions we found alcoholism in the first place.
The importance of describing the social and clinical situation of patients with tuberculosis lies in the identification of risk factors, that can be considered in the development of strategies focused on the clinical manifestations of our region.

Constructing Functional Networks of Phosphorylation Sites Using Co-Phosphorylation
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Motivation. Protein phosphorylation is a ubiquitous regulatory mechanism that plays a central role in cellular signaling. According to recent estimates, up to 70% of human proteins can be phosphorylated. Therefore, the characterization of phosphorylation dynamics is critical for understanding a broad range of biological and biochemical processes. Technologies based on mass spectrometry are rapidly advancing to meet the needs for high-throughput screening of phosphorylation. These technologies enable untargeted quantification of thousands of phosphorylation sites in a given sample. Many labs are already utilizing these technologies to comprehensively characterize signaling landscapes by examining perturbations with drugs and knockdown approaches, or by assessing diverse phenotypes in cancers, neuro-degerenational diseases, infectious diseases and normal development.
Method. We comprehensively investigate the concept of 'co-phosphorylation' (Co-P), defined as the correlated phosphorylation of a pair of phosphosites across various biological states. We integrate nine publicly available phosphoproteomics datasets for various diseases (including breast cancer, ovarian cancer and Alzheimer's disease) and utilize functional data related to sequence, evolutionary histories, kinase annotations and pathway annotations to investigate the functional relevance of Co-P.
Results. Our results across a broad range of studies consistently show that functionally associated sites tend to exhibit significant positive or negative Co-P. Specifically, we show that Co-P can be used to predict with high precision the sites that are on the same pathway or that are targeted by the same kinase.
Conclusion. Overall, these results establish Co-P as a useful resource for analyzing phosphoproteins in a network context, which can help extend our knowledge on cellular signaling and its dysregulation.

Critical Reflection in Practice: Generating Knowledge from the Interactions with *Promotores* for Engagement in Neurocognitive Disorders
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1 UTRGV Institute of Neuroscience

Background: Colonias are underserved areas along the Texas-Mexico border, with high incidences of neurocognitive disorders, dementia, and Alzheimer's disease (AD). Our goal is to build capacity to reduce risk, facilitate treatment for affected individuals, and provide caregiver support. Our aim was to construct an approach that was reflective and would reveal the rich and diverse ways in which people make meaning of their experiences and interactions with scientists, faculty, staff and students.
Methods: We examined our work with local community health workers. (CHWs), promotores in Spanish, to establish contact with, engage, mobilize, and educate the Hispanic communities of the Lower Rio Grande Valley (LRGV).Qualitative research methods were the principal way to approach this aim, including critical reflection.
Results: We now have 347 certified promotores in LRGV: 174 in Cameron County, 169 in Hidalgo County, 3 in Starr County, and 1 in Willacy County. Most of the promotores in LRGV are female, Spanish-speakers (98%) although half of them are also fluent in English and more than half of the promotores have five years or more as a state-certified CHW. Assumptions about knowledge, power and reflexivity surfacedin the interactions with members of the academic world interacting with Colonia's residents.
Conclusions: Aspects of critical reflection, including deconstructing assumptions about knowledge, power and reflexivity, are useful to guide actions that facilitate capacity building in the Colonias, as well as action research methodology. The LRGV population's characteristics make early detection of AD and dementia and support for patients and
caregivers' high priorities and clearly understanding the role of promotores as mediators is important.

Differential cortical monoamines release during exercise in rats chronically implanted with microdialysis probes
Christine Gerin

Physical exercise is known to positively influence mood, to reduce anxiety and to improve reaction to stress. Cerebral monoaminergic systems are thought to underly the neurochemical influence of exercise on mood and behavior.
We hypothesize that beneficial effects of exercise can be shown by variations of neurotransmitters release in the cerebral cortex.
We aim at demonstrating that there is a temporal relationship between release of plasma and, cerebral monoamines (A, NA, 5-HT, DA) and, spontaneous running exercise in rats.
Findings indicate that spontaneous exercise specific stress induces DOPAC extracellular increase resulting from DA neuronal terminal release in layers IV and V of the fronto-parietal terminal field cortex. Differences between DA, NA, 5-HT release might be due to synaptic arrangements or to differences in the actual release of NT and in neural paths evoked during acute exercise.

Evaluating Internal Medicine Resident Cardiology Knowledge by In-Service Training Exam Performance: A Four-Year Review
Schamma Salomon, MD1, Chelsea Chang, MD
1 UTRGV SOM

Introduction: The In-Service Training Examination in Internal Medicine (IM-ITE) has been offered annually to all trainees in U.S. medical residency programs since 1988. Its purpose is to provide residents and program directors with an objective assessment of each resident's performance on a written, multiple-choice examination and the performance of the residency program compared with that of its peers. This study aims to determine which measurable educational objectives contributed to improving In-training examinations in cardiology and which did not. Furthermore, we hope to highlight the strengths and weaknesses of the current knowledge to objectively evaluate and improve our cardiology rotation and education.
Description: We retrospectively reviewed the cardiology content area of the UTRGV-DHR IM in-training program performance report from 2018-2021. First, we compared the overall score report for PGY-1, PGY-2, and PGY-3 to the national mean. We then reviewed cardiology's educational objectives and classified them into four categories by percent correct: <30,31-55, 56-75, and 76-100. Next, we reviewed the topics of cardiology lectures given from 2018-2021. Finally, we reviewed our program's current available curriculum for cardiology rotation, the ACGME requirement, and the ABIM blueprint. Items with a score of <30 and 31-55 were considered areas of weakness, and a score of 76-100 was regarded as an area of strength. The cardiology didactic and rotation curriculum is updated according to areas of weakness, ACGME requirements, and the ABIM blueprint.
Discussion: Although many other factors such as increased studying time, presence or lack of life stressors, and previous knowledge base may influence ITE scores, we can use the
patterns that we identify to tailor our didactics and cardiology rotation to improve the program.This review identifies some gaps in our program cardiology educational/didactic experience. It also highlights the urgent need to formally define and study what constitutes an effective, adaptive, and dynamic "core" lectures/rotation curriculum for the cardiology experience of the internal medicine residents at UTRGV-DHR.Lastly, in looking ahead, the applicable program's next step will be to provide ongoing feedback and monitor the process.

Exploring a Hispanic community's well-being during the early stage of the COVID-19 pandemic
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Background: A crisis is a serious and stressful situation that brings instability and uncertainty. Although the COVID-19 crisis includes many characteristics of other crisis, it is unique in some respects. It is a worldwide life-threatening and long-term crisis with unknown consequences. The outcomes of the COVID-19 pandemic are mostly under exploration and investigation. The effects of the pandemic on mental health are incontrovertible. The impact of the COVID-19 pandemic on communities has not been uniform. In the early stage of the pandemic, when the country and the RGV were exhausted with the numbers of those infected with COVID and the lives that were lost, the authors decided to quantify the mental and physical effects COVID-19 was having on members of the RGV community.
Methods: Research questions: Were any factors related to community members' health during the early stage of the pandemic? If there was an association, what was the direction of those association on mental and physical health? The study design was mainly quantitative with some qualitative approach. A convenience sample of 62 adults was taken from Idea Academy in Pharr San Juan School District of the Rio Grande Valley (RGV),a historically disadvantaged community, to explore the effects of the pandemic on their well-being. To analyze the data, simple descriptive statistics, Chi-square and fisher's Exact tests and logistic regression were used. The qualitative data were coded and organized to enrich the results.
Results: The results indicated that factors of marriage, a care giver role, comorbid conditions and health insurance were related to the participants' well-being. Additionally, in the qualitative section, factors of uncertainty, having a family member as an essential worker, and media were also revealed.
Conclusions: This finding mirrors the inequality seen in pandemic era, and the necessity of supporting disadvantaged and oppressed communities during crises.

Implementation of a Training Module on Alcohol Prevention for *Promotoras* on a Border Community in the Rio Grande Valley.
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Background: Complications due to unhealthy alcohol use are widely spread, and there is a significant unmet need for prevention and treatment in the community. The South Texas-Mexico border region consists of over ninety percent of Hispanics and suffers from a significant shortage of physicians. Alcohol-related problems are highly unrecognized and untreated in this large Hispanic population due to the shortage of healthcare providers, low education levels, and limited trust in the health care system. Prevention efforts should be designed to prevent or reduce the risk of developing alcohol addiction.
Methods: The proposed module focuses on enhancing the Promotoras or Community Health Worker (CHW) ability to screen and recognize unhealthy alcohol use and the need for referral for care. We use a survey to follow and record the experience of a subset of these Promotoras who will educate Hispanic families from their communities.
Results: This module provides data that will significantly contribute to our understanding of the barriers in knowledge, access to services, and care for people with alcohol problems. The study consists of a "train-the-trainer" module designed by the Institute of Neuroscience at the University of Texas Rio Grande Valley (UTRGV) specifically for Promotoras. CHW aimed at increasing their knowledge concerning general health practices among ethnic minorities, specifically in terms of alcohol abuse prevention. The initial workshop trained 44 Promotoras from Cameron and Hidalgo counties. Each Promotora was assessed using pre-and post-test questionnaires.
Conclusions: The research team assessed Promotora's alcohol knowledge and prevention strategies with plotted data. In summary, the study provided a measurable unit of our training module in enhancing understanding of screening and the need for intervention for alcohol-related problems by Community Health Workers.

Modeling nonsegmented negative-strand RNA virus (NNSV) transcription with ejective polymerase collisions and biased diffusion
Felipe-Andres Piedra

Background: The textbook model of NNSV transcription predicts a gene expression gradient. However, multiple studies show non-gradient gene expression patterns or data inconsistent with a simple gradient. Regarding the latter, several studies show a dramatic decrease in gene expression over the last two genes of the respiratory syncytial virus (RSV) genome (a highly studied NNSV). The textbook model cannot explain these phenomena.
Methods: Computational models of RSV and vesicular stomatitis virus (VSV – another highly studied NNSV) transcription were written in the Python programming language using the Scientific Python Development Environment. The model code is freely available on GitHub: https://github.com/BCM-GCID/Publications/tree/main/Rethinking_NNSV_Gene_Expression. In brief, the models simulate one or more viral RNA-dependent RNA polymerases (pols) taking a random walk down a linear genome divided into chunks of a size approximating the footprint of a single pol and stochastically initiating and terminating transcription.
Results & Conclusions: Models incorporating ejective pol collisions and biased pol diffusion succeed in capturing published RSV and VSV gene expression patterns. Our model makes the following major predictions in need of wet lab experimental testing: 1) ejective collisions can occur between NNSV pols; 2) non-transcribing RSV pols undergo 5' biased diffusion along the viral genome; and 3) an increase in the number of pols bound to and diffusing along an NNSV genome leads to more frequent pol-pol collisions and a sharper transcription gradient. Single molecule TIRF-based assays are needed to test predictions 1-2, while 3 can be tested using established minigenome or recombinant genome assays along with high throughput sequencing.

Pro-and Anti-inflammatory Biomarkers as Predictors of Response to Valproate in Patients with Comorbid Alcohol Use and Bipolar Disorder-Preliminary Findings

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Objective/Hypothesis: Bipolar disorder (BD) has the highest association with alcohol and other substance use disorders compared to other major psychiatric disorders. This patient population is particularly challenging to treat. We have previously shown that some patients with co-occurring alcohol use and bipolar disorders respond to the GABAergic agonist valproate (VPA), which is known to modulates the dopaminergic system, and also as an epigenetic modifier. Predictors of therapeutic response to VPA in patients with AUD/BD are not known, and the subgroup which would benefit from VPA is still to be identified. Recent evidence suggests that AUD promotes a pro-inflammatory state while VPA increases levels of anti-inflammatory factors. We hypothesized that VPA has an anti-inflammatory effect and that patients with AUD/BD who respond to VPA have higher baseline inflammatory indices.
Methods: Nine patients with DSM-IV-defined diagnoses of AUD and BD (AUD/BD) were enrolled in the study. Patients received a course of VPA for 3months at an average dose of 1000 mg a day in addition to receiving either naltrexone of 50 mg daily or placebo. Blood was collected prior to the initiation of VPA and throughout the treatment study. Liver function tests and trough VPA serum concentrations were evaluated periodically. Alcohol use outcome was assessed using the Timeline Follow-Back for Recent Drinking. The use of other drugs was monitored through regular urine drug screen. The primary alcohol use outcome was changes in proportion of weekly heavy drinking days (defined as $\geq$5 drinks per day for men and $\geq$4 drinks per day for women). Plasma levels of cytokines were measured using Multiplex Immunoassay, in accordance to the manufacturers' recommendations.
Results: We found that about one half of enrolled patients responded to VPA. Screening of pro-and anti-inflammatory cytokines showed that responders had higher levels of the chemokineSDF-1α/CXCL12α and the pro-inflammatory marker C-reactive protein (CRP) and lower levels of anti-inflammatory factor matrix metalloproteinase-10 (MMP-10) ($p < 0.05$). Screening of cytokines in samples before and after treatment with VPA showed that VPA increased levels of anti-inflammatory factors interleukin-10 (IL-10) and MMP-10 ($p < 0.05$) and tended to decrease levels of pro-inflammatory CRP ($p > 0.05$).
Discussion: Pro-and anti-inflammatory biomarkers may serve as predictors of treatment response to VPA in patients with combined AUD/BD. Our preliminary results also suggest that therapeutic effect of VPA may be in part due to anti-inflammatory action of VPA. Larger studies may be indicated to validate these findings.

Storage Temperature Affects Müller Glia Susceptibility to Hypoxia

Assraa Jassim, Martin Garcia, Jose Martinez

Background/Objective: We conducted this project to differentiate cell susceptibility to hypoxia (low O2 level) between immortalized Müller glia (MIO-M1) stored in -80 versus liquid nitrogen.
Method: MIO-M1 cells were cultured and seeded in 12 well plates at 40K/well and in 6 well plates at 75K/well until confluence. Cell culture conditions: centrifugation time and speed, neutralization, and storage temperature were varied. Cells were subjected to chemically induced hypoxia by treatment with 300 and 400uM CoCl2 for 24 and 48hours. Oxygen level was measured in cells, cells were imaged and counted.
Results: Centrifugation and neutralization conditions did not affect cell survival. We found that storing MIO-M1 cell in -80 makes these cells more susceptible to death by hypoxia. First, we found that %live MIO-M1 cells stored in liquid nitrogen is near 100% compared to ~60% live cells when stored in -80. Second, cells stored in -80 showed significant susceptibility to chemically induced hypoxia compared to cells stored in liquid nitrogen that survived treated for 24 and 48 hours.
Conclusion: We concluded that storage of these cells in liquid nitrogen maintain survival during hypoxic events. Cells' susceptibility to hypoxia indicates that storage in -80 affect glycolysis efficiency in these cells to maintain survival. During hypoxia, mitochondrial is dysfunctional as they depend on O2 for ATP production during oxidative phosphorylation. Cells stored in liquid nitrogen survived hypoxic conditions, which may indicate that MIO-M1 depends on glycolysis for ATP production. Further investigation will proceed to determine Müller glia metabolism preference.

Staff Category

Architectural Features of Streetscapes and Aging in Cameron County, Texas: Preliminary Results
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Background: An estimated 23% of global deaths are due to the environments in which people live. We aim to characterize prevalent architectural features of Cameron County, Texas street scapes and analyze their role in health promotion and healthy aging.
Methods: We studied several design attributes of the streetscapes in Cameron County, Texas. Elements analyzed included: site connectivity with context, pedestrian quality, scale of buildings, architectural elements, landscaping, and signage.
Results: Some of the most frequent general features:-There is little interrelationship between open spaces and buildings. Parking lots are usually in front of buildings. -Urban streetscapes are mostly designed for motorists and not for pedestrians. -Most buildings are at human scale, with few buildings over 5 floors. -The most common residential architectural style is Ranch-Style house characterized by single-story, open space concept, almost non-existent ornaments, and low-pitch rooflines. -In retail store buildings, we have the same style but with variation in the façade. The distribution of the spaces and the essence of the buildings, it's the same. We can find the same typology of store open space without ornamentation. The parking and the functionalism are the protagonist in the design. The tall palms characteristic of the region add scale to street edges; however, their canopies are high and small, and few provide shade. Blank walls are common, with few exhibiting architectural features that enhance streetscapes. Most signage is commercial and does not enhance building character or the pedestrian experience.
Discussion: Streetscape design is essential to creating safe, appealing environments that engender pedestrian activity. We identified the most frequent typologies of architectural design in Cameron County. This information will be particularly relevant to build environment policy, as well as to residents and researchers interested in understanding influences on urban health.

Interdisciplinary Integrated Primary and Behavioral Healthcare (I2PBH) Initiative
Evan Garcia

The Interdisciplinary Integrated Primary and Behavioral Healthcare (**I2PBH**) initiative will train University of Texas Rio Grande Valley (**UTRGV**) mental health graduates to deliver high quality, evidence-based Integrated Behavioral Health (**IBH**) services in the Rio Grande Valley (RGV) – a high-need, high-demand, medically underserved Hispanic region along the US-Mexico border. Specifically, the I2PBH initiative will train 24 UTRGV mental health graduates annually to deliver high-quality IBH clinical services through the evidence based Primary Care Behavioral Health (**PCBH**) model. With a training emphasis on basic/advanced theory and clinical skills in the PCBH model, students will serve as Behavioral Health Consultants (**BHC**) while working alongside UT Health RGV healthcare professionals in a primary care setting. The I2PBH initiative increases the presence of culturally concordant, primary care competent BHCs on the front lines of four rural clinics to function as primary care providers (**PCP**) extenders for all behaviorally informed needs of patients, increasing access and delivering whole-person care.

Molecular event in HRP Apoptosis

Laura Valdez

Background: Human retinal pericytes (HRP) are contractile cells adjacent to and provide support for endothelial cells (EC) of capillaries, which are essential in the regulation of retinal vasculature. Early stages of DR are characterized by the loss of HRP, which leads to the development of advanced-stage pathology including angiogenesis. Although much is known about the etiology of DR, the apoptotic pathway that incites HRP loss remains unclear. Our preliminary studies reveal that monocyte-derived macrophages secrete TGF-*β*1, which induces the expression and secretion of a TGF-*β*1-Induced, pro-apoptotic BIGH3 protein (TGF-*β*–Induced Gene Human Clone 3) leading to apoptosis of HRP *Eye*, *30*(12), 1639-1647 Based on a preliminary study in renal cells (unpublished data), CTP (c-terminal peptide) with an RGD domain is released from BIGH3 by proteolysis leading to renal cell apoptosis. In the present study, we employed Western Blots to determine if a similar molecular event also takes place in the BIGH3 protein to induce HRP apoptosis.

Methods: HRP cells were obtained from Cell Systems and were cultured in complete media with 10% FBS, 1% penicillin/streptomycin, in a humidified 5% CO2 incubator with a temperature of 37°C. Cells were harvested from passages 5-8 until reaching confluency. HRP were starved for 24hrs with media composed of only DMEM and 1% penicillin/streptomycin prior to getting treated 24 hours with and without 15ug/mL of TGF-*β*, 50ug/mL of Leupeptin (a protease inhibitor), and with both TGF-*β* and Leupeptin. Conditioned media was collected after 24hrs and stored in -80C until protein concentration assay and probed with an anti-BIGH3 polyclonal antibody, an in-house generated rabbit antibody generated against full-length recombinant BIGH3. Western blot analyses of the cleaved BIGH3 protein band were quantified using ImageJ.

Results/Conclusion:

Consistent with our previous observation, culture HPR secret BIGH3 protein. Western blots show two BIGH3 protein bands: un-cleaved protein (60kD) and cleaved (or truncated). Image analyses of band intensity of the cleaved proteins was significantly reduced (by five-fold) in the presence of Leupeptin (a protease inhibitor). Similarly, a two-fold reduction of the cleaved protein was also observed when Leupeptin was added to the cell media in conjunction with TGF-*β*. Thus, our results are consistent with prior observations in renal cells that CTP release (by proteolysis) from BIGH3 is a molecular event in the HRP apoptosis. A growth curve was conducted in order to determine the different cell growth phases for the appropriate time of treatment.

Primary Care Behavioral Health Partnerships Advancing & Transforming Health Sciences (PCBH PATHS)

Salvador Arellano III

Purpose

Primary Care Behavioral Health Partnerships Advancing & Transforming Health Sciences (PCBH PATHS) is a workforce development pipeline project aimed at permanently augmenting UTRGV's institutional capacity to address shortage of an Integrated Behavioral Health (IBH) competent workforce locally, regionally and nationally. Our initiative, aligned with UTRGV strategic priorities and key initiatives, will integrate basic(model specific strategy and operational elements), mid-level (role identity and profession specific behavioral competencies specific to each health profession), and advanced (behavioral medicine clinical skills) applications of the evidence based PCBH model of delivery. A PCBH focused delivery system (clinical and educational), in which primary care providers (PCPs) and behavioral health consultants (BHCs) are trained to provide routine, population-based, biopsychosocial care in the Rio Grande Valley (RGV) can increase parity for mental health access, minimize toxic effects of culturally bound stigma, reduce fragmentation of physical-mental health and stave off the effect of an expanding opioid use disorder (OUD) crisis.

Description

The PCBH PATHS initiative is designed to impact 2,004 clinician learners, with 1,106 PCP trainees (FM, IM, Ob/Gyn, FNP, PA, MS), 818 mental health provider (MHP) trainees, and 80 PCP/MHP practitioners in the RGV by 2024. Over the past four years, the evidence-based PCBH model has been implemented in FM and Ob/Gyn Residency programs clinically, to increase access to whole-health focused services for patients, and educationally, to increase physician competencies in PCBH to provide high quality whole-person care consistently. This initiative strengthens our existing commitment to expand the PCBH model across University of Texas Health Rio Grande Valley (UT Health RGV) primary and specialty care clinics to address physical and behavioral health disparities (e.g., diabetes, depression, pain management, opioid, and substance use issues) for a predominantly Latino population along the US-MX border.

Partners

In partnership with all primary care provider training programs at UTRGV (PA, NP, Residents) and mental health provider training programs led by the Department of Counseling, this collaborative project will use institutional expertise and infrastructure capacity to integrate PCBH model focused education to augment existing training programs.

Looking Ahead

· By year 2024, PCBH PATHS will impact 2004 clinician learners, demonstrated by:
· Ten programs aligning PCBH PATHS to existing courses for a PCBH certificate
· PCP trainee programs adopting policies to require Medication Assisted Treatment (MAT)-Waiver for graduation
· An educational research database for tracking % of PCP/MHP graduates completing the PCBH PATHS certificate; % of PCBH PATHS grads practicing in a Medically Underserved Community (MUC); % of grads practicing MAT; % of PCBH PATHS grads intending to practice / champion PCBH
· 6 PCBH sustained clinics: Demonstrated cost-savings through prospective, case-control design
· Sustaining wellness committees and practices as part of PCBH PATHS implementation
· 8 durable, HRSA-priority deliverables, for replicating PCBH PATHS at other institutions

The Fortify Resilience Initiative

Peter Averack

Purpose

The Fortify Resilience Initiative focuses on building and sustaining a culture of wellbeing for Residents and Fellows (R/Fs) at The University of Texas Rio Grande Valley (UTRGV) School of Medicine's (SOM) Graduate Medical Education (GME) residency and fellowship programs. In order to address the multitude of threats to physician wellness and to mitigate the silent, but pernicious effects of burnout on these physician learners serving in the RGV, this Initiative from the Office of GME will strengthen existing wellbeing pathways while expanding additional solutions that will work to sustain wellbeing. Utilizing a combination of prevention, promotion, and intervention strategies targeted at the individual, program, and system levels, this initiative increases resilience by addressing existing gaps that only further propagate the spread of risk and vulnerability to the community.

Description

The Fortify Resilience Initiative maintains three key drivers (**Access Strategy, Empowerment Initiatives, and System Redesign**) that all work to address and enhance components central to wellbeing management. Within the **Access Strategy** is continuous access to direct online clinical and coaching services, annual opt-out wellness check-ins, monthly live online learning sessions with embedded didactics as well as skill development practical labs. Launch of a Wellbeing Mobile Application (WMA), allowing users to periodically self-assess and receive suggestions to improve self-management as well as the establishment of Program Specific Wellness Committees (PSWC), constitute the **Empowerment Initiatives**. Consultations with each partnered program's leadership, along with the introduction of a faculty development pathway to train faculty to full competency over current wellbeing methodologies, aim at establishing a presence of institutional expertise and represent the **System Redesign** driver.

Partners

The Fortify Resilience Initiative at UTRGV is illuminated through a vital partnership with Tend Health (TH). TH is an innovative company specialized in the care and well-being of health professionals, with a history of successful partnerships with GME programs offering mental health and well-being focused services. TH is an essential partner in two of the key drivers – **Access Strategy and System Redesign**.

Looking Ahead

By year 2024, the Fortify Resilience Initiative seeks to impact 249+ UTRGV R/Fs, along with training 20 faculty members as demonstrated by:

· Graduating all R/Fs with self-management of well-being competencies
· Establishing access strategy services as routine part of UTRGV GME programs

- Integrating technology solutions – WMA – as a core strategy for resilience for GME programs
- Enrolling 100% of new R/Fs as users on the WMA via GME on-boarding each program year
- Sustaining PSWC's across 19+ GME programs with routine use of the WMA
- Establishing a scalable culture of wellbeing strategy for the UTRGV SOM
- Building resilience supporting policies within programs and institution
- Developing a UTRGV Faculty Affairs sustained Master Trainer Faculty
- Development (MTFD) track to continue delivery of resilience trainings by MTFD scholars

Understanding the resources, barriers, facilitators and interests about aging and dementia research of community members from the Rio Grande Valley

Karla Lopez Lorenzo

Background

One of ten people aged 65 develops Alzheimer's Disease and it is one of the sixth-leading cause of death in the United States. The Rio Grande Valley (RGV) is mostly constituted by Hispanic/Latinos (93%), a population that has a 1.5X increased risk of AD onset. Nevertheless, there are not enough resources to support people living with dementia and their care partners. This study will leverage research efforts deployed by the RGV Alzheimer's Disease Resource Center for Minority Aging Research to understand the social representations about the resources, barriers, facilitators, and interests of the RGV community about dementia and Alzheimer's Disease research.

Methods

Four focus groups were conducted online via Zoom on April 20Recruitment for Condcutio22 with a total of 15 participants (people living with dementia, caregivers, and community leaders from the RGV). Interactions occurred at their preferred language, mostly in Spanish and the discussion was based on six semi-structured questions about aging and dementia research. Focus groups were translated to English and analyzed using the Consolidated Framework for Implementation Research (CFIR).

Results

We reunited 15 participants from different backgrounds, and we group them in two categories and compared the responses from each group for the analysis.

Community health workers (*promotoras*) are one of the most important resources and facilitators in the Valley due to their deep knowledge of the dynamics of the community. The main barrier for dementia and aging research is the lack of information, which leads to fear, and stigmas and ultimately keeping target communities away from the resources. Focus groups served also as a channel of communication. After conducting the focus groups, some of the participants went from being unaware of the presence of Alzheimer's disease and dementia research in the Valley to deciding about acting toward their prevention and participating in the research.

Conclusions

The information collected during the focus groups will be used to strengthen community engagement strategies and to support the design and implementation of health disparities frameworks to facilitate tailoring of our strategies to maximize the impact of the resources developed to be used in the communities of the RGV.