Poster Session
Monday, April 14, 2025
5:30 pm – 6:45 pm
Avenue Ballroom

CASE REPORTS

Poster # Title/Author

1 VENTRICULAR SEPTAL DEFECT POST-MYOCARDIAL INFARCTION PRESENTING AS FAILURE TO THRIVE AND CARDIOGENIC SHOCK: A CASE REPORT HIGHLIGHTING THE CRITICAL ROLE OF EARLY RECOGNITION AND REFERRAL *(Cardiology / Cardiovascular Disease)*
David G. Gonzalez-Sanchez, MD, University of Missouri Kansas City

Myocardial infarction (MI) remains a leading cause of morbidity and mortality worldwide [1]. Ventricular septal defects (VSD) are a rare but life-threatening complication of MI, typically presenting with dyspnea, orthopnea, heart failure, and a new left lower sternal border holosystolic murmur [2,3]. We present a case that highlights an atypical presentation of post-MI VSD as multiple visits to the emergency department for failure to thrive, progressing to cardiogenic shock.

2 THE CRUCIAL ROLE OF PHYSICAL EXAMINATION IN UNCOVERING HIDDEN DIAGNOSIS *(Cardiology / Cardiovascular Disease)*
Abdul Wali Khan, University of Missouri Kansas City

In a healthcare landscape increasingly dominated by advanced imaging techniques and laboratory tests, the fundamental skills of physical examination often risk being undervalued. We present a case of a ventricular septal defect (VSD) that was accurately diagnosed through a detailed physical examination. This case highlights the critical role of a comprehensive history and thorough clinical examination in minimizing diagnostic errors and ensuring timely diagnosis and optimal patient care.

3 STRUGGLES OF MANAGING ESOPHAGEAL NECROSIS: A CLINICAL PERSPECTIVE *(Cardiology / Cardiovascular Disease)*
Abdul Wali Khan, University of Missouri Kansas City

Acute esophageal necrosis (AEN), also referred to as “black esophagus” or Gurvits syndrome, is a rare life-threatening condition characterized by necrosis of the esophageal mucosa on EGD, preferentially affecting the distal esophagus but can also affect the proximal and middle third. A higher risk of AEN is associated with comorbidities like diabetes, alcoholism, malnutrition, hypertension, kidney disease, and cardiovascular issues. We present a rarely reported case of AEN associated with elevated troponin levels, with limited management guidelines available, highlighting the importance of less aggressive approaches with an emphasis on careful patient selection.

4 CORONARY ARTERY ECTASIA AND GIANT CORONARY ANEURYSMS AMIDST SEVERE MITRAL VALVE REGURGITATION *(Cardiology / Cardiovascular Disease)*
Geoffroy A. Napon, MD, University of Iowa-Des Moines Internal Medicine

Giant coronary artery aneurysms (GCAAs), defined as aneurysms exceeding 2 cm in diameter, are exceptionally rare, with an estimated incidence of only 0.02%.1,2 These conditions can pose challenges for interventional procedures traditionally used to manage severe symptomatic mitral valve regurgitation. This case report presents the intricate management of an elderly patient with severe symptomatic mitral valve regurgitation, complicated by the presence of both GCAAs and coronary artery ectasia.

5 AN ATYPICAL PRESENTATION OF DISSEMINATED VZV IN AN IMMUNOCOMPROMISED PATIENT *(Dermatology)*
Richard Moraga, BS, Rosalind Franklin University of Medicine & Science

Varicella zoster virus (VZV) is a common dermatologic condition, typically presenting in childhood as an exanthema with pruritic, painful skin lesions that progress from macules to vesicles and crusts. In older individuals with a history of chickenpox, reactivation of VZV leads to herpes zoster (shingles), presenting as unilateral, burning, vesicular eruptions along a dermatomal distribution. The most challenging form is disseminated herpes zoster, where lesions extend beyond the primary dermatomes and may affect the skin, eyes, and internal organs. This is suspected when at least 20 scattered vesicular lesions are observed. Atypical presentations, such as painless lesions, purple nodules, or hemorrhagic bullae, are common in immunosuppressed individuals and may delay diagnosis. This report presents a clinical case of atypical VZV.

6 DYSGENESIS OF THE CORPUS CALLOSUM AND PORENCEPHALIC CYST MIMICKING HOLOPROSENCEPHALY: IMPLICATIONS FOR ACCURATE PRENATAL DIAGNOSIS *(Diagnosis or Treatment of a Disease Process or Clinical Syndromes)*
Brian J. Kan, BSA, Texas Tech University Health Sciences Center El Paso, Paul L. Foster School of Medicine

Dysgenesis of the corpus callosum (DCC) and porencephalic cyst (PC) are rare fetal brain anomalies that can mimic more severe conditions like holoprosencephaly (HPE) on prenatal imaging. HPE, a developmental disorder of the forebrain, is often associated with significant neurological impairment or fatality, while DCC and PC may have a more favorable prognosis. This case underscores the challenges in distinguishing these conditions in-utero, emphasizing evolving prenatal diagnostics and coordinated care to optimize outcomes for mother and baby.

8 UNUSUAL PRESENTATION OF PERNICIOUS ANEMIA: HEMOLYSIS *(Diagnosis or Treatment of a Disease Process or Clinical Syndromes)*
Jacqueline Dragon, MD, Englewood Hospital and Medical Center

Vitamin B12/Cobalamin deficiency classically presents with neuropsychiatric symptoms from dietary insufficiency, nitrous oxide, or malabsorption. A high clinical suspicion is needed for rare presentations that mimic emergencies.

9 INTERPLAY BETWEEN UTERINE FIBROIDS AND DEEP VEIN THROMBOSIS: A CASE REPORT *(Diagnosis or Treatment of a Disease Process or Clinical Syndromes)*
Ayesha Khan, MD, Insight Hospital and Medical Center

Deep vein thrombosis (DVT) can arise from various factors, including immobility, genetic predispositions, and hormonal influences. Mechanical obstructions, such as tumors or large fibroids, can impede blood flow and contribute to DVT formation. These obstructions are often overlooked, as symptoms may mimic other conditions, delaying accurate diagnosis and treatment.

10 ALLERGIC BRONCHOPLUMONARY ASPERGILLOSIS (ABPA) SANS ASTHMA: UNMASKING AN UNCOMMON CLINICAL ENTITY *(Diagnosis or Treatment of a Disease Process or Clinical Syndromes)*
Farwah Shah, MD, MPH, Insight Hospital and Medical Center

Allergic Bronchopulmonary aspergillosis is an immunologic pulmonary disorder resulting from hypersensitivity to Aspergillus Fumigatus most often found in patients with asthma or cystic fibrosis (1). This can result in permanent lung damage. This case report highlights the importance of early diagnosis and prompt management to prevent complications and disease progression.

12 SUBACUTE CEREBROVASCULAR ACCIDENT AND POSSIBLE SEIZURES TRIGGERED BY ELECTRONIC CIGARETTES *(Hematology and Oncology / Bone Marrow Transplant)*
Olaniyi Fadeyi, West Anaheim Medical Center

Adverse consequences of e-cigarettes have been a subject of debate since it was introduced to the market. Although, the most common adverse effect documented is respiratory cough [1], other worrisome side effects have been reported. Some of these health concerns which include e-cigarette or vaping use-associated lung injury (EVALI), stroke, seizures, cardiovascular diseases, bronchiolitis, and lipoid pneumonia have been seen. In fact, several seizure occurrence and other neurologic symptoms associated with the use of e-cigarettes were spontaneously reported between December 2010 and January 2019 according to the US food and drug association's (FDA's) center for tobacco products [2]. While it has been difficult to establish a causal relationship between the use of e-cigarettes and seizures, adulterated nicotine liquids have been suggested as being responsible for these episodes of e-cigarette-associated seizures. Further, use of e-cigarettes by patients who are currently exposed to other triggers for hypercoagulability may accelerate thromboembolism and subsequently result into cerebrovascular accident (CVA) in patients with heart defects. Here, we report a case of a 22-year-old female who was brought to the hospital with complaints of seizures after using e-cigarettes. Further work-up revealed bilateral pulmonary emboli and subacute CVA.

13 MIND THE SMALL PRINT: A RARE VARIANT BCR::ABL1 BREAKPOINTS (E14A3) IN CHRONIC MYELOID LEUKEMIA *(Hematology and Oncology / Bone Marrow Transplant)*
Yuanli Lei, MD, University of Oklahoma Health Sciences Center

Translocation t(9;22)(q34;q11.2) and its variants that result in a BCR::ABL1 fusion gene is the main driver for chronic myeloid leukemia (CML) pathogenesis. Most CML cases (>95%) see breakage of the BCR gene downstream of exon 13 or 14 (e14) of BCR and upstream of exon 2 of ABL1. Less frequently, alternative transcripts with different breakpoints have also been reported. Such breakpoints/transcripts were categorized as major, minor, micro, and atypical based on their frequencies. BCR::ABL1 detection by quantitative reverse transcriptase-polymerase chain reaction (RT-PCR) is the standard practice for monitoring response to treatment and residual disease in the tyrosine kinase inhibitor era.

14 HEMOPHAGOCYTOSIS IN CEREBROSPINAL FLUIDS DURING IMMUNE EFFECTOR CELL-ASSOCIATED NEUROTOXICITY SYNDROME ASSOCIATED WITH CAR T-CELL THERAPY AXICABTAGENE CILOLEUCEL *(Hematology and Oncology / Bone Marrow Transplant)*
Yuanli Lei, MD, University of Oklahoma Health Sciences Center

Immune effector cell-associated neurotoxicity syndrome (ICANS) is a neuropsychiatric syndrome associated with chimeric antigen receptor (CAR) T-cell therapies. ICANS or neurotoxicity occurs in 74% of patients receiving axicabtagene ciloleucel. The median time of onset is 5 days (ZUMA-7 trial).[1] The incidence of hemophagocytic lymphohistiocytosis (HLH) in ZUMA-7/ZUMA-1 trials was 0% and 1% respectively. Although not fully understood, the combination of influx of circulating cytokines due to increased blood-brain barrier permeability and local production of cytokines by cells within the central nervous system (CNS), is believed to cause cortical and subcortical dysfunction in ICANS.[2]

15 CO-OCCURRENCE OF TWO PRIMARY HEAD AND NECK MALIGNANCIES: BASE OF TONGUE AND NASOPHARYNGEAL CARCINOMA *(Hematology and Oncology / Bone Marrow Transplant)*
Sione Markarian, BA, University of California, Los Angeles, David Geffen School of Medicine

Head and neck squamous cell carcinomas (HNSCC) represent a diverse group of malignancies originating from the mucosal surfaces of the oral cavity, pharynx, and larynx. The co-occurrence of two primary head and neck malignancies is an exceedingly rare clinical presentation. Nasopharyngeal carcinoma has an incidence of 25/100,000 in Asians versus 0.5/100,000 in the west. This case highlights a Caucasian male in his 7th decade with a 30-pack year smoking history who presented growing right sided neck mass. Biopsy confirmed synchronous poorly differentiated p16 positive HNSCC of the right base of tongue (BOT) but p16 negative left nasopharyngeal carcinoma. The p16 disparity confirmed the dual primary nature of his cancers. This distinction was crucial for proper chemoradiotherapy-based definitive intervention. Limited literature exists on the management of such cases, making an addition of a case like this to the medical literature, valuable for future clinicians.

16 MORE THAN MEETS THE EYE: A CASE OF PEDIATRIC METASTATIC MELANOMA WITH LYMPHOMA-LIKE PRESENTATION *(Hematology and Oncology / Bone Marrow Transplant)*
Samantha Peters, BS, Wester Michigan University Homer Stryker M.D. School of Medicine

Melanoma in the pediatric population is rare, accounting for approximately 1% of all melanoma cases and 3% of all pediatric cancers.1,2,3 Due to its rare presentation, the pathophysiology, clinical features, and histopathology of pediatric melanoma are not well-characterized. The estimated annual incidence rate was nine per million in pediatric patients aged 15 to 19 years according to the 1975-2014 Surveillance, Epidemiology, and End Results (SEER) Cancer Statistics Review4. Diagnosis is difficult to establish, especially in pre-pubertal children, whose melanoma may present as a non-specific, amelanotic lesion with benign growth morphology. This results in frequent missed and delayed diagnosis.5,6

17 WHEN TO STOP – PERSISTENT SYMPTOMS DESPITE TREATMENT *(Infectious Disease / Immunization)*
Salvador Fernandez, MD, Southern Illinois University School of Medicine

Infections of the central nervous system, particularly those that lead to distinct masses on imaging, can often be the cause of neurologic symptoms. Treatment of these infections frequently helps resolve these symptoms. Certain complex infections, such as those with Mycobacterium tuberculosis, require longer courses of treatment. When this is coupled by persistent symptoms, it becomes difficult to determine when to finalize a course of treatment. We present a case of disseminated tuberculosis with intracerebral tuberculomas, with persistent symptoms despite appropriate therapy.

18 UNVEILING A RARE PATHOGEN CAUSING ACUTE NON-HEMATOGENOUS OSTEOMYELITIS OF THE FOOT *(Infectious Disease / Immunization)*
Mizba Baksh, MD, Insight Hospital and Medical Center Chicago

Osteomyelitis (OM), especially the non-hematogenous type, can spread from adjacent soft tissue wounds, and direct bone infection due to trauma, bites, or surgery.[1-3] It is usually caused by Staphylococcus aureus (including MRSA) and aerobic gram-negative bacilli, whereas less common agents include corynebacterium, fungi, and mycobacteria.[4-5] Data on rare causes such as Trueperella bernardiae (T. bernardiae) are limited. T. bernardiae, originally classified as a Corynebacterium species, is part of normal skin flora that can cause bacteremia, wound infections, and rarely post-surgical infections. Herein, we report the first case of acute non-hematogenous OM with T. bernardiae identified in tissue culture and biopsy.

19 SEVERE SEPSIS DUE TO BORDETELLA PETRII: A NOVEL PATHOGEN IN BACTEREMIA WITH IMPLICATIONS FOR IMMUNOSUPPRESSED PATIENTS *(Infectious Disease / Immunization)*
Lanah Almatroud, Michigan State University College of Human Medicine

Bordetella petrii (B. petrii) is a gram-negative bacillus (GNB) first isolated in 2001 from an anaerobic bioreactor enriched with river sediment (1). B. petrii is distinguished within the genus Bordetella by its large genome and extensive repertoire of virulence factors, which contribute to its notable antibiotic resistance (2). While localized infections caused by B. petrii have been reported, instances of bacteremia and sepsis due to this organism are not found in the literature. We present a case of B. petrii bacteremia in a patient with a history of pulmonary fibrosis, who developed severe sepsis following immunosuppressive treatment. To our knowledge, this is the first documented case of B. petrii as a causative agent of bacteremia leading to severe sepsis and ultimately death.

21 PELVIC INFLAMMATORY DISEASE CAUSED BY PASTEURELLA MULTOCIDA *(Infectious Disease / Immunization)*
Lea Kobrossy, North Dakota State University

Pelvic inflammatory disease (PID) refers to inflammation of the upper female genital tract, including the uterus, fallopian tubes, and ovaries. PID is most commonly caused by ascending sexually transmitted infections. However, non-sexually transmitted pathogens, such as Pasteurella multocida (P. multocida), can rarely lead to PID. P. multocida is a fastidious gram-negative coccobacillus frequently found in oral flora of cats and dogs. It is a rare cause of infections in human, most commonly present as soft tissue infections, exposure can be a risk factor even without bites or scratches. Previous reports have demonstrated that Pasteurella can cause systemic infections, including bacteremia, and in rarely, tubo-ovarian or pelvic inflammatory disease.
We report a case of 32-year-old woman with adenomyosis and psoriatic arthritis on methotrexate and adalimumab. She presented with persistent fevers and mild left side abdominal pain. Initial imaging was suggestive of left side pelvic inflammatory disease. Due to lack of improvement with medical treatment, patient underwent surgical intervention for source control, a cell-free DNA assay identified P. multocida, which didn't grow in regular blood and tissue cultures.

7 MATERNAL-FETAL MEDICINE CONSIDERATIONS IN A PATIENT WITH CLIPPERS: A RARE NEUROLOGICAL DISORDER IN THE OBSTETRIC SETTING *(Neurology)*
Daniel Lovasz, BS, Texas Tech University Health Sciences Center, Paul L. Foster School of Medicine

Chronic lymphocytic inflammation with pontine perivascular enhancement responsive to steroids (CLIPPERS) is a rare inflammatory demyelinating disorder of the central nervous system, with fewer than 100 cases reported in the literature. It is often misdiagnosed as other demyelinating or inflammatory disorders. CLIPPERS is characterized by pontine lesions and symptoms such as dizziness, diplopia, and headaches. This case highlights a pregnant patient with CLIPPERS from a Maternal-Fetal Medicine (MFM) perspective and the ongoing maintenance of remission during pregnancy without the use of maintenance therapy.

22 EARLY ONSET OF CEREBRAL VENOUS THROMBOSIS IN PREGNANCY *(Neurology)*
Edy Quizhpe, n/a, Universidad San Francisco de Quito

Cerebral venous thrombosis (CVT) in pregnancy is a very rare condition, but should not be confused with the clinical presentation of other common conditions such as pre-eclampsia. Although rare and difficult to diagnose, it is potentially serious and can increase maternal mortality. Diagnosis by imaging tests such as MRI and early treatment with heparin reduces maternal and perinatal mortality. Many predisposing factors can contribute to the development of CVT, including a history of thrombosis and thrombophilic disorders. However, the most individual risk factor is pregnancy or puerperium. This rare and uncommon pathology, has a prevalence ranging from 0.49 to 1.72 per 1000 deliveries depending on the country, 80% of which occur in the venous system and account for 10% of all maternal deaths. (1). Pregnancy is a hypercoagulable state prepared to prevent bleeding during childbirth or a miscarriage; nevertheless, it natural condition increase the risk to thrombotic four or five times that these events appear even is higher during the puerperium. (2, 3) The most common clinical manifestations are severe headache, seizures, nausea, vomiting and focal neurological deficit. (4, 5). Diagnosis based on neuroimaging and early treatment with anticoagulation are important to improve prognosis.

23 A PEDIATRIC CASE OF AN UNLIKELY SUBTYPE OF AUTOIMMUNE ENCEPHALITIS *(Neurology)*
Makaela Hamilton, DO, University of Illinois Chicago

Encephalitis is thought to be the result of inflammation of the brain parenchyma with consequent neuropsychiatric changes.1,2 Encephalitis is rare in pediatrics, the etiology being unexplained up to 50% of the time.3 More infrequent is Autoimmune encephalitis (AE), which alludes to self-directed immune mediated activities against neurologic tissue. Inflammation can be a key feature, with alterations to synapses and other non-inflammatory pathways driving neuropsychiatric changes. Progress in the field of molecular immunology has resulted in the recognition that many of the unexplained “idiopathic cases” are the result of autoimmunity, with antibody mediated processes now coming to the forefront. The most common antibodies associated with AE are anti-NMDAR, anti-MOG, and anti-GAD65. We hereby report a case of AE being the result of a rare antibody, P/Q-Type Calcium Channel antibody; due to its uncommon nature its neuropsychiatric phenotype has not been well described.

24 UNVEILING THE UNCOMMON: EPSTEIN BARR VIRUS-ASSOCIATED TRANSVERSE MYELITIS IN AN IMMUNOCOMPETENT HOST *(Neurology)*
Israr Khan, MD, Insight Hospital and Medical Center

Approximately 80-90% of adults in the United States are seropositive for the Epstein-Barr Virus (EBV). Infectious mononucleosis develops in 25-70% of cases; however, neurologic complications occur in 3% of cases, including aseptic meningitis, encephalitis, transverse myelitis (TM), autonomic neuropathy, and mononeuritis.(1,2) Acute TM is characterized by acute spinal cord dysfunction involving motor, sensory, and bowel or bladder abnormalities.(3) Most commonly occurs as an autoimmune process to post-infection or due to direct infection or other systemic autoimmune and demyelinating disorders.(4) TM is a rare complication of EBV.

25 A DIAGNOSTIC CHALLENGE: DIFFUSE ASTROGLIOSIS WITH LYMPHOCYTIC INFILTRATE *(Neurology)*
Alyaa Saleh, Central Michigan College of Medicine

The presentation of dizziness, nausea, and unsteady gait encompasses common symptoms with a broad differential diagnosis stemming from multiple potential etiologies, including vestibular, neurological, cardiovascular, and medication-related causes[1]. In the elderly, these symptoms may arise from age-related physiological changes, such as declining vestibular function, chronic comorbid conditions, and potential side effects from polypharmacy[2]. These symptoms frequently overlap, posing diagnostic challenges requiring careful assessment to pinpoint the underlying cause. We present a case report of an elderly patient with an anatomic cardiac anomaly who exhibited unresolved nausea, ataxia, and dizziness, with ambiguous initial neurological imaging.

26 A PREGNANT WOMAN WITH RH VARIANTS AND MULTIPLE RH ALLOANTIBODIES *(Pathophysiology / Pathology)*
Heidi Christian, MD, University of Illinois Hospital and Health Sciences System

Rh variants may not be identified by typing prior to sensitization. These antigenic variants differ in prevalence among ethnic groups and by clinical significance. This is important to be aware of particularly when there is a discrepancy in donor and recipient populations. AlloAbs may be more likely to form in the recipient population when there is a drastic difference in Ag expression from the donors. Donor units may be challenging to locate in the case of alloAb formation to common RBC Ags.

27 NOVEL USE OF MURPHY EYE FOR LEFT BRONCHIAL STENT PLACEMENT *(Pulmonary / Critical Care)*
Kendal Benson, Midwestern University Chicago College of Osteopathic Medicine

Lung cancer is one of the most common cancers diagnosed today and is the leading cause of cancer death in the United States. Of these patients 20-30% develop complications related to central airway obstruction, and 40% of deaths related to lung cancer are due to complications from regional growth (6). Malignant central airway obstruction can happen in three ways: malignant growth within the airway, extrinsic airway compression, and bronchial wall invasion with luminal occlusion. Debulking procedures, though not life-prolonging, aid the patient in breathing and oxygenation, which can enhance comfort in their final months (5). In certain cases, a stent may also be placed to increase airway patency (5). This procedure is done via bronchoscopy, most commonly through the primary distal opening of the endotracheal (ET) tube. The ET tube was first developed in the 1900s with the Murphy eye added in the 1950s, largely as a fail-safe to maintain the airway should the primary opening become occluded (1). We present a case demonstrating the potential therapeutic use of the Murphy eye, in place of the primary opening, when accessing the left bronchial tree.

28 MASSAGE GUN INDUCED SUBMASSIVE PULMONARY EMBOLISM *(Pulmonary / Critical Care)*
Nikhil Furtado, BS, Creighton University School of Medicine

The use of massage guns has increased significantly, with many individuals using them for muscle recovery, pain relief, and therapeutic purposes. However, while these devices have become a common tool for physical therapy, there is limited scientific evidence supporting their clinical effectiveness. Several case reports have highlighted serious complications associated with their use, including rhabdomyolysis, vertebral artery dissection, and pseudoaneurysms. This case report describes an extremely rare and severe complication of massage gun use—pulmonary embolism (PE)—illustrating the risks that may accompany these devices.

29 CHITOTRIOSIDASE: A MARKER OF THERAPEUTIC RESPONSE IN AFRICAN AMERICANS WITH SARCOIDOSIS *(Pulmonary / Critical Care)*
Tishena Lloyd, MD, University of Illinois at Chicago

Sarcoidosis is a heterogeneous systemic granulomatous disease of unknown etiology that primarily involves the lungs, and in the United States disproportionately affects African Americans. The decision to initiate immunosuppressive treatment is often made to prevent disease progression and irreversible fibrosis of involved organs. However, immunosuppression poses multiple risks and currently, there are no accurate biomarkers to help determine patient response to treatment or to guide treatment discontinuation.
Chitotriosidase, a chitinolytic enzyme that is predominantly secreted by activated macrophages, plays a role in the innate immune response. In the context of sarcoidosis, some cohorts have reported elevated chitotriosidase levels in over 90% of patients with active sarcoidosis and it has been proposed as a biomarker of disease activity that reflects macrophage activation and granuloma burden. Moreover, elevated chitotriosidase levels may indicate extrapulmonary involvement and increased severity of lung fibrosis. Conversely, in a European cohort, decreasing chitotriosidase levels were proposed to reflect therapeutic responses to effective immunosuppressive treatment. Despite this, there is a paucity of data on chitotriosidase level monitoring in African Americans, particularly in assessing disease activity and therapeutic response.
Thus, in this case series, we explore the association between chitotriosidase levels and treatment in African American patients with diagnosis of sarcoidosis.

20 IATROGENIC HEPATITIS B LEADING TO POLYARTERITIS NODOSA: A COMPLICATION OF UNSCREENED BLOOD TRANSFUSION. *(Rheumatology)*
Lanah Almatroud, n/a, Michigan State University College of Human Medicine

Polyarteritis nodosa (PAN) is a rare systemic necrotizing vasculitis that primarily affects medium-sized arteries, leading to significant morbidity due to organ ischemia and inflammation. While often associated with hepatitis B virus (HBV) infection, the incidence of HBV-related PAN has declined with widespread vaccination programs [1]. PAN linked to HBV is believed to result from immune complex deposition, triggering vascular inflammation and subsequent ischemic injury. Advancements in HBV vaccination and blood safety measures have significantly reduced the prevalence of HBV-related PAN. This report describes a case of HBV-related PAN in a patient who acquired HBV following unscreened blood transfusion in the 1980s, highlighting the complex interplay between chronic viral infections and systemic vasculitis.

30 DUAL POSITIVITY FOR ANTI-MDA5 AND ANTI-PL-7 ANTIBODIES IN CLINICALLY AMYOPATHIC DERMATOMYOSITIS: A RARE PRESENTATION *(Rheumatology)*
Clare Omatsone, MD, University of Illinois Chicago

Clinically amyopathic dermatomyositis (CADM) is a rare subset of idiopathic inflammatory myopathies characterized by skin manifestations without overt muscle involvement. Autoantibodies like anti-MDA5 are strongly associated with CADM and predict a high risk of rapidly progressive interstitial lung disease (RP-ILD). Conversely, anti-PL-7 is typically linked to anti-synthetase syndrome, characterized by myositis, ILD, mechanic's hands, Raynaud's phenomenon, and arthritis. As both antibodies are known to be associated with ILD, close monitoring for its development and prompt treatment are crucial. Dual positivity for anti-MDA5 and anti-PL-7 antibodies is exceedingly rare, with only a handful of cases reported worldwide. This unique case underscores the complexity of disease management, highlighting the interplay of distinct disease features and the need for individualized treatment strategies.

T0 Research/Science

Poster # Title/Author

31 NOVEL PHARMACOLOGICAL TREATMENT FOR PREECLAMPSIA: IN VITRO AND IN VIVO STUDY *(Diagnosis or Treatment of a Disease Process or Clinical Syndromes)*
Mehruba Zaman, BS, MS, Virginia Commonwealth University School of Medicine

Preeclampsia (PreE) is a hypertensive pregnancy disorder, which occurs in approximately 10% of all gestations. The literature hints at a potential therapeutic role of H2 relaxin in PreE. Due to the complex insulin-like structure of relaxin (A- and B- chains, 53 amino acids, 3 disulfide bonds), a novel H2 relaxin B-chain-only peptide variant B7-33 (27 amino acids without any disulfide bonds) has recently been developed.

32 ALLEVIATING STZ-DIABETIC FEMALE MICE BODY WEIGHT LOSS WITH ORAL GAVAGE OF HIPPOCRAETA VELUTINA EXTRACT *(Endocrinology / Metabolism)*
Maricica Pacurari, PhD, Jackson State University

Streptozotocin-induced diabetic mouse model is a widely used model to study cardiomyopathy in diabetes. However, STZ induces also body weight loss thus limiting studies progression.

33 EXPOSURE TO AEROSOLIZED MICROCYSTIN IMPACTS THE EXPRESSION AND RELEASE OF PRO-INFLAMMATORY SIGNALING MOLECULES FROM HEALTHY AND ASTHMATIC HUMAN AIRWAY EPITHELIAL CELLS IN A CONGENER DEPENDENT MANNER *(Environmental Factors Affecting Health)*
Bivek Timalsina, MS, University of Toledo

Cyanobacterial harmful algal blooms (cHABs) are increasing in frequency, releasing toxic microcystins (MCs) into the environment, including airborne aerosols. MC-LR, MC-RR, and MC-LA are among the primary congeners detected in significant concentrations within cHAB aerosols. While MCs are known to induce inflammation, their effects on the human airway following inhalation remain poorly understood.

34 POST-TRANSLATIONAL MODIFICATION OF HUMAN IL-33 IMPACTS CYTOKINE INFLAMMATORY ACTIVITY *(Immunology / Allergy)*
Morgan Payne, BS, Washington University in St. Louis

IL-33 is a proinflammatory cytokine upregulated in airway epithelium that propagates type-2 inflammation in chronic airway diseases such as chronic obstructive pulmonary disease (COPD) and asthma. While the abundance of IL-33 expression in airway epithelial cells is established, mechanisms that regulate cytokine release and activity are not fully understood. We have previously described a role for alternative splicing in regulated cytokine secretion in COPD that results in tonic cytokine secretion from airway cells. Upon release, IL-33 interacts with its primary receptor ST2 and IL-1RAcP forming a ternary complex, allowing for the propagation of type-2 immune signaling.

35 REVIVIFY GEL AND POWDER DRINK AS LOW AS ONE-THIRD CONCENTRATION ATTENUATED THE INFLAMMATORY AND ANTI-OXIDATIVE MARKERS IN LIPOPOLYSACCHARIDE-INDUCED JURKAT CELLS *(Immunology / Allergy)*
Waafi Awal, Missouri Southern State University

REVIVIFY pro-vitality antioxidant gel/powder is composed of primary antioxidant superoxide dismutase [SOD], prebiotic fibers, and diverse polyphenols from various fruit juices. SOD diminishes the superoxide free radicals produced during normal cellular processes. Dietary prebiotic fibers modulate beneficiary gut eco microbiomes and provide many health benefits including immunity. Polyphenols are phenolic compounds that act as antioxidants, anti-inflammatory, and antiviral agents that repair cells damaged from reactive oxygen and nitrogen species ROS/RNS. Combination of these three components stimulate immunity via T-cell activation and antioxidative and anti-inflammatory pathways. The Jurkat cell line is an immortalized T lymphocyte cell line that has most often been used as a prototypical T-cell line to study multiple events in T cell biology, including T cell signaling. In a previous study, we showed that both Revivify gel and powder attenuated the lipopolysaccharide-induced activation of Jurkat cells' secretion of inflammatory and oxidative stress markers.

37 PARAOXONASE-1 PROTECTON OF VASCULAR CALCIFIACTION AND BONE MINERAL DISORDER IN AN ADENINE INDUCED MODEL OF CHRONIC KIDNEY DISEASE. *(Nephrology)*
Prabhatchandra Dube, PhD, University of Toledo

Chronic kidney disease (CKD) is associated with vascular calcification and low bone mineral density. Paraoxonase-1 (PON1) is a lactonase enzyme synthesized in the liver and associated with HDL particles. It plays a crucial role in enhancing HDL's antioxidant, anti-inflammatory, and anti-atherogenic properties. Decreased PON1 activity leads to increased oxidative stress and is linked to worse clinical outcomes in CKD. However, the role of PON-1 in vascular calcification and bone mineral disorder in the context of CKD remains largely unexplored.

38 TARGETING THE MICROGLIA RECEPTOR TREM2 IN ALZHEIMER'S DISEASE: STRUCTURAL AND FUNCTIONAL ANALYSIS OF TREM2-MEDIATED AMYLOID BETA PHAGOCYTOSIS *(Neurology)*
Jessica Greven, BA, Washington University in St. Louis

The development of new innovative treatments to prevent and ameliorate Alzheimer's disease (AD) requires knowledge of molecular mechanisms that are critical to neuronal health. The receptor TREM2 is part of a signaling complex that modulates inflammatory responses, phagocytosis and cell survival in microglia– resident immune cells in the brain that play a critical role in clearing misfolded aggregates such as amyloid beta (Aβ). In recent years, TREM2 has emerged as a promising drug target for AD. Understanding the molecular mechanisms underlying TREM2 signaling in microglia will facilitate the development of specific, safe and efficacious therapies for AD that target TREM2.

36 COMPARISON OF URINARY LEVELS OF ANGIOGENIC FACTORS AND A CARDIOTONIC STEROID IN PREGNANT PATIENTS WITH AND WITHOUT PREECLAMPSIA *(Pathophysiology / Pathology)*
Waafi Awal, Missouri Southern State University

Preeclampsia (preE) is a disorder characterized by the de novo onset of hypertension and proteinuria at mid-gestation. Despite scientific advances, preE remains a leading cause of maternal and neonatal mortality, preterm birth, and morbidity, particularly in developing countries. Soluble endoglin (sEng), PlGF (Placental Growth Factor), TGF-β-1, VEGF, and marinobufagenin are all implicated in new blood vessel formation called angiogenesis. An imbalance of pro- and anti-angiogenic factors is thought to cause preE. Marinobufagenin (MBG) is an endogenous cardiotonic steroid (CTS) that is elevated in preE; PlGF and VEGF are pro-angiogenic factors; sEng is an anti-angiogenic factor.

39 METABOLIC REGULATION OF HEPATIC GENES IN METHIONINE AND HOMOCYSTEINE METABOLISM: ROLE OF PPARG. *(Pathophysiology / Pathology)*
Izabela M. Hawro, University of Illinois Chicago

Metabolic Dysfunction-Associated Steatotic Liver Disease (MASLD) is the leading cause of chronic liver disease worldwide1, and it is associated with the dysregulation of methionine and homocysteine (Hcy) metabolism. Recently, we published that hepatocyte peroxisome proliferator-activated receptor gamma (Pparg) is positively associated with the progression of diet-induced MASLD and negatively with the regulation of methionine and Hcy metabolism2.

40 CARMIL1 EXPRESSION ALTERS ENDOTHELIAL CELL SHAPE AND BARRIER FUNCTION *(Pulmonary / Critical Care)*
Mohammed Yaman Al Matni, MD, University of Illinois Chicago

The acute respiratory distress syndrome (ARDS) results in severely impaired gas exchange and high mortality. Loss of pulmonary endothelial cell (EC) barrier integrity is a common pathologic hallmark of ARDS. Cytoskeletal proteins are critical regulators of EC barrier function. Alterations in actin structure and membrane-associated actin polymerization change EC shape to determine barrier function. Variation in the gene encoding the cytoskeletal regulator capping protein Arp2/3 complex myosin-I linker (CARMIL1) results in an isoleucine substitution for valine at amino acid position 77 and is implicated in human ARDS (Wei, et al. AJRCCM 2017). CARMIL1 is known to function at the periphery of motile cells and regulate membrane protrusion. We have previously identified a role for CARMIL1 in pulmonary EC regulation.

41 FIBRONECTIN-TARGETING PEPTIDE PET PROBE UPTAKE DURING FIBROGENESIS CORRELATES WITH LUNG FUNCTION DECLINE DURING THE PHASE OF ESTABLISHED FIBROSIS IN THE MURINE MODEL OF THE DISEASE *(Pulmonary / Critical Care)*
Ksenija Bernau, PhD, University of Wisconsin-Madison

Idiopathic pulmonary fibrosis (IPF) is a devastating disease that leads to death in over 40,000 people in the U.S. each year due to relentless scar formation, lung stiffening and respiratory failure. Average survival from diagnosis is 3-5 years, with disease course varying drastically and unpredictably1, 2. A major barrier for effective clinical care of patients with this disease is the lack of non-invasive biomarkers for real-time assessment of disease activity3, 4. IPF is characterized by persistent deposition of extracellular matrix (ECM) proteins. This process is initiated in fibroblastic foci, the leading edge of new fibrosis5-7. Fibronectin is one of the most differentially upregulated ECM glycoproteins and plays a key role in fibrogenesis7. Fibronectin serves as a scaffold for deposition of other ECM and specifically localizes to fibroblastic foci, thus playing a key role during the early phases of disease progression7, 8.

42 FUNCTIONAL ROLE OF S1PR2 IN MRSA-INDUCED LUNG INJURY AND BARRIER DYSFUNCTION *(Pulmonary / Critical Care)*
Alison W. Ha, PhD, University of Illinois Chicago

Acute respiratory distress syndrome (ARDS) is a severe and often fatal form of respiratory failure. Sepsis is among the leading causes of ARDS, with Methicillin-resistant Staph aureus (MRSA) serving as a common pathogen that causes systemic inflammation and ARDS. The disruption of the alveolar-capillary membrane barrier is a hallmark of MRSA-induced acute lung injury (ALI) and leads to increased permeability and accumulation of fluid and proteins within the lung. Understanding the mechanisms that preserve the alveolar-capillary membrane integrity is crucial for advancing therapeutic strategies to combat ARDS. Among key molecular players, sphingosine-1-phosphate receptors (S1PR) are recognized for their roles in modulating endothelial barrier function. While S1PR1 has been well established as barrier promoting, the role of S1PR2 in barrier regulation remains less clearly defined.

43 HSP70 IS A CHAPERONE FOR IL-33 SECRETION AND FUNCTION IN CHRONIC AIRWAY DISEASE *(Pulmonary / Critical Care)*
Omar Osorio, Washington University in St. Louis

IL-33 is a key driver of type 2 inflammation and relevant to epithelial biology. However, the mechanisms for IL-33 secretion and regulation in the context of chronic airway disease is still not understood.

44 ELUCIDATING THE STRUCTURAL AND FUNCTIONAL BASIS OF TREM2/IL-34 SIGNALING IN INFLAMMATORY AIRWAY DISEASE *(Pulmonary / Critical Care)*
Joshua R. Wydra, Washington University in St. Louis

TREM2 is an extracellular receptor expressed on macrophages. Engagement of ligands by TREM2 triggers signaling that controls macrophage function and roles in disease. The cytokine IL-34 was recently identified as a novel ligand for TREM2. Given the role of activated macrophages in inflammatory airway diseases, we sought to investigate the potential role of TREM2/IL-34 in inflammatory signaling and elucidate the structural basis for this novel interaction.

45 DOES ATORVASTATIN MITIGATE RENAL TRANSPLANT REJECTION? A DRUG REPURPOSING STUDY *(Transplant Medicine)*
Hunter M. Eby, University of Toledo College of Medicine and Life Sciences

Renal transplant rejection occurs in approximately 20% of recipients, significantly reducing graft lifespan by up to 50%. This often necessitates re-listing patients for transplantation and returning them to dialysis. Development of medications to prevent renal rejection has been a priority in transplantation research. The most recent drug approved to combat rejection, belatacept, received FDA approval in 2011. Despite ongoing efforts, the development of new medications frequently falters during Phase 2 clinical trials (70-80%). This study seeks to overcome this challenge by leveraging an in silico approach to identify FDA-approved drugs that could be repurposed to mitigate rejection events.

T1 Research/Science

Poster # Title/Author

46 ATTENUATED IMMUNE AND EXTRACELLULAR VESICLE RESPONSES TO AEROBIC EXERCISE IN T2D SUGGESTS IMPAIRED EXERCISE BIOLOGY *(Endocrinology / Metabolism)*
Jane Nakamura, University of Michigan

The insulin resistance that typifies type 2 diabetes (T2D) leads to alterations not only in metabolic functioning but also a host of other biological networks, including the immune system. Impaired immunity in T2D is associated with numerous comorbidities that adversely affect the quality of life in this population. Regular exercise can "reverse" adverse outcomes associated with T2D, whereby its beneficial effects are thought to be mediated through inter-organ cross talk via exerkines and extracellular vesicles (EVs). In healthy adults, the EVs released during exercise are associated with strengthening the immune system by mechanistically facilitating the adaptive exercise response. However, little research has been conducted establishing the exerkine and EV profile in individuals with T2D during acute exercise.

47 A RARE CASE OF LUNG CANCER METASTATIC TO THE STOMACH AND PERITONEUM *(Hematology and Oncology / Bone Marrow Transplant)*
Milania J. Agajanian, Loyola Marymount University

Non-small cell lung cancer (NSCLC) that is metastatic to the stomach and peritoneum is a rare presentation accounting for less than 1% of cases. NSCLC more typically spreads to the brain, liver, bones and adrenal glands. While management of more common organ specific metastases are well established with NSCLC, gastric and peritoneal have little to no guidance from society guidelines. This results in poorer prognosis for these patients.

48 SUPERIOR VENA CAVA SYNDROME FROM MEDIASTINAL GERM CELL TUMOR *(Hematology and Oncology / Bone Marrow Transplant)*
Isabella C. Agajanian, BS, University of California, San Diego

Primary mediastinal germ cell tumors (PMGCTs) are rare and aggressive malignancies representing about 1-3% of all germ cell cancers and 10-15% of all anterior mediastinal malignancies. Superior vena cava (SVC) syndrome occurs when the SVC is occluded, resulting in facial edema, neck distention, dilated chest wall veins, and dyspnea. SVC syndrome is an oncologic emergency affiliated with high mortality if untreated, and most cases have been associated with lung cancer. While it only affects 10% of mediastinal tumors, it has been seldom reported for PMGCTs. Prompt clinical intervention with chemotherapy, stents, and radiation is needed to impede clinical deterioration.

49 EVALUATING A NOVEL HOST-IMMUNE RESPONSE ASSAY FOR ACUTE RESPIRATORY TRACT INFECTIONS IN THE EMERGENCY DEPARTMENT *(Infectious Disease / Immunization)*
Helena Ikenberry, BerbeeWalsh Department of Emergency Medicine at the University of Wisconsin-Madison School of Medicine and Public Health

Acute respiratory tract infections (ARTIs) are a common cause of emergency department (ED) visits but difficulty distinguishing between viral and bacterial etiologies often results in the inappropriate use of antibiotics. Current methods for distinguishing viral and bacterial ARTIs, such as microbiological tests (e.g. cultures, respiratory pathogen panels) and host proteins like procalcitonin (PCT) and C-reactive protein (CRP), have limitations related to turn around time and diagnostic performance. The MeMed BV® (Bacterial Viral) test is a recently FDA-approved host-immune response test to aims to help distinguish between viral and bacterial ARTIs. It is an automated semi-quantitative immunoassay which integrates the levels of three host proteins (TRAIL, IP-10, and CRP) and uses proprietary mathematical modeling to compute the probability of a viral versus bacterial infection.

T2 Research/Science

Poster # Title/Author

50 PEER-BASED MODEL FOR TRAINING RESEARCH STAFF IN MULTI-SITE STUDIES *(Pulmonary / Critical Care)*
Sarah Darski, MPH, University of Illinois Chicago

Variations in how a study is implemented across sites in a multi-site study could introduce measurement error that adversely affects the internal validity of results. While centralized training sessions or sponsor-led training visits to sites can be helpful, training between peers from experienced sites can help elicit nuance and build relationships that can support training throughout the study. However, little is known about the impact of cross-site, peer-based training, especially through practical observation.

T3 Research/Science

Poster # Title/Author

51 CORRELATION BETWEEN CORONARY ARTERY CALCIUM SCORE AND MYOCARDIAL ISCHEMIA IN CARDIAC NUCLEAR STRESS TESTING *(Cardiology / Cardiovascular Disease)*
Adi Aharonov, MD,

Coronary artery disease (CAD) is the leading cause of death in Western countries (1). The pretest probability of obstructive CAD is usually based on symptoms and cardiovascular risk factors. CAD evaluation may include the coronary artery calcium (CAC) score or a cardiac nuclear stress test. The CAC score measures coronary calcification, indicating plaque burden, while the nuclear stress test assesses myocardial perfusion under stress with radioactive tracers to detect ischemia. Limited data are available on the correlation between CAC scores and nuclear stress test results.

52 90-DAY AMBULATORY SENSING COMPARISON BETWEEN INTERCOSTAL EXTRAVASCULAR ICD AND TRANSVENOUS ICD LEAD SYSTEMS *(Cardiology / Cardiovascular Disease)*
Gabriel Chimera, Midwestern University Chicago College of Osteopathic Medicine

A novel extravascular (EV) ICD lead (AtaCor Medical, San Clemente, CA) designed for compatibility with commercial DF-4 compatible ICD pulse generators (PG) is under development.

53 SAFETY OF A NOVEL EXTRAVASCULAR TEMPORARY PACING LEAD WITH COMPARISON TO HISTORICAL TRANSVENOUS TEMPORARY PACING LEADS *(Cardiology / Cardiovascular Disease)*
William Crockett, Midwestern University

Transvenous temporary pacing (TV-TP) is not without complication. A new extravascular temporary pacing (EV-TP) lead (AtaCor Medical; San Clemente, CA) placed from an intercostal, anterior parasternal approach has been developed.

54 ADVERSE OUTCOMES ASSOCIATED WITH BETA BLOCKER USE IN HFPEF: FINDINGS FROM A 10-YEAR COHORT STUDY *(Cardiology / Cardiovascular Disease)*
Alex J. Kloster, MD, University of Toledo

Beta blockers are some of the most commonly prescribed medications in patients with heart failure (HF), however, their role in the management of heart failure with preserved ejection fraction (HFpEF) remains controversial, as evidence supporting their efficacy in improving outcomes for HFpEF patients is limited.

55 MACHINE LEARNING ANALYSIS IDENTIFIES OXIDIZED LIPIDS PREDICTIVE OF 5-YEAR OUTCOMES IN HEART FAILURE WITH PRESERVED EJECTION FRACTION *(Cardiology / Cardiovascular Disease)*
Reid Miller, MD Candidate, University of Toledo College of Medicine and Life Sciences

Heart failure with preserved ejection fraction (HFpEF) is often an underdiagnosed condition associated with systemic inflammation and microvascular disfunction. Oxylipins, bioactive metabolites of polyunsaturated fatty acids, play integral roles in controlling inflammation and oxidative stress. Given these roles, oxylipins have potential to serve as biomarkers for predicting HFpEF.

56 DIAGNOSIS AND TREATMENT OF CHRONIC DISRUPTIVE DIZZINESS IN POST-911 VETERANS FOLLOWING MILD TRAUMATIC BRAIN INJURY *(Diagnosis or Treatment of a Disease Process or Clinical Syndromes)*
Maria E. Camargo, University of Texas Health Science Center San Antonio

While post-9/11 Veterans often experience dizziness following traumatic brain injuries, whether the dizziness persists over time, if that persistent dizziness leads to a clinical diagnosis, what treatments are sought, and the extent to which that treatment is working is not well understood.

57 CONFIDENCE LEVEL OF PROGRAM DIRECTORS AND PROGRAM COORDINATORS POST GME RETREAT *(Environmental Factors Affecting Health)*
Lord Boachie, University of Toledo

Graduate Medical Education (GME) plays an instrumental role in the education and training of healthcare professionals. It plays a crucial role in providing advanced specialty training for residents and fellows and ensuring the competence of future physicians. Consequently, it is essential that program directors and coordinators of GME programs are equipped with the tools and proficiency to continue to optimize their program. To achieve such goals, constant education and re-education of the leaders of such programs can be very beneficial.

11 TRANSFORMING PATIENT CARE: ENHANCING DISCHARGE EDUCATION AND IMPROVING COMMUNICATION THROUGH STAFF TRAINING AND THE TEACH-BACK METHOD *(Health Disparities / Diversity / Equity / Inclusion / Social Determinants / Ethics)*
Farwah Shah, MD, MPH, Insight Hospital and Medical Center

Nearly 90% of U.S. adults struggle with complex health information, impacting healthcare costs and increasing morbidity and mortality rates [1]. Limited health literacy significantly impacts a patient's ability to understand and follow discharge instructions. Miscommunication can result in prescribed medications not taken as directed, concerning symptoms overlooked, and missed follow-up visits [2]. Discharge process is usually left for the day of discharge and can lead to communication gaps due to time constraints. One study found that 10% of discharges contain significant errors, such as incorrect medications or incomplete instructions, and about one third of the patients needed further education prior to discharge emphasizing a gap in patient comprehension at discharge [3]. Healthcare professionals should prioritize clear discharge instructions and allocate adequate time for patient education to improve outcomes and reduce readmissions. To address these issues, healthcare organizations must improve discharge communication and use evidence-based strategies like the Teach-Back Method, to confirm patients' understanding of discharge instructions in a patient-centered, shame-free environment.

58 TIMING AND PERCEPTIONS OF MCAT PREPARATION IN UNDERGRADUATE EDUCATION *(Health Disparities / Diversity / Equity / Inclusion / Social Determinants / Ethics)*
Dorsa Mohammadigerani, BS, California State University - Los Angeles

The MCAT is a critical milestone for aspiring medical students, but it's timing often sparks debate. Many students feel that taking the MCAT during undergraduate studies offers an advantage, allowing them to leverage recent academic knowledge and enter medical school promptly. However, the challenges of balancing MCAT preparation with coursework, extracurriculars, and personal responsibilities need to be managed.

59 IMPROVING THE EQUITY OF CERVICAL CANCER PREVENTION THROUGH EDUCATION AND VACCINATION *(Infectious Disease / Immunization)*
Angela C. Judd, MD, New York Presbyterian Brooklyn Methodist Hospital

Cervical cancer is the most common gynecologic cancer worldwide and fourth most common female malignancy. Ethnic and racial minorities are impacted disproportionally, however less is known about the impact of primary language. Inequitable HPV vaccination rates may worsen these disparities. Standardized interventions to improve vaccine equity should reduce disproportionate cancer burden.
In 2016 the CDC recommended HPV vaccination for females and males age 9-26 years. Recent research shows improved vaccination uptake if supported by friends, parents, and doctors.
This initiative is novel in its focus on increasing education about HPV/cervical cancer and interest in vaccination through simple intervention, as well as exploration of the impact of demographics including primary language on vaccine uptake and parental perspectives on HPV infection/cancer risks.

60 EFFICACY OF BOTULINUM TOXIN TYPE A FOR REFRACTORY UPPER LIMB ESSENTIAL TREMORS *(Neurology)*
Nicole Waller, Saint Louis University

Essential tremor is the most common neurologic cause of postural or action tremors which result in involuntary, rhythmic shaking of a body part.[1] Essential tremors have shown to negatively impact the activities of daily living (ADL) and quality of life of patients with neurologic disorders. Botulinum toxin type A, an injectable acetylcholine inhibitor, holds promise as a treatment option for essential tremor (ET) patients.[2] However, the correct implementation, as well as the effectiveness, of botulinum toxin as a treatment for essential tremors has yet to be fully established.

61 UNDERSTANDING HOW PFT INTERPRETATION AFFECTS SARCOIDOSIS PHENOTYPES *(Pulmonary / Critical Care)*
Yashodha Narayanan, BS, University of Illinois College of Medicine

Sarcoidosis is a heterogeneous disease with diverse phenotypes, clinical manifestations, and variable pulmonary function. Two primary strategies for interpreting pulmonary function tests (PFTs) exist: the Global Initiative for Chronic Obstructive Lung Disease (GOLD) and the American Thoracic Society/European Respiratory Society (ATS/ERS). The latter is currently recommended by the 2022 ATS/ERS guidelines using Global Lung Function Initiative (GLI) reference equations. However, the impact of the ATS/ERS criteria on detecting abnormal lung function in sarcoidosis remains unclear. Since treatment decisions such as bronchodilator use, corticosteroid therapy, and disease monitoring often rely on PFT classification, discrepancies between these criteria may influence clinical outcomes. This study evaluates the impact of reclassification on phenotypic identification and its potential clinical implications.

62 FACTORS CONTRIBUTING TO ACHILLES TENDON RE-RUPTURE: A SYSTEMATIC REVIEW *(Surgery)*
Abimbola O. Kolawole, BS, Central Michigan University College of Medicine

Achilles tendon rupture is a common injury in athletes with an incidence of 2.17 per 100 000 persons annually. Differing re-rupture rates have been reported across populations, and the factors contributing are vague.

63 DIFFERENTIAL IMPACT OF SUPERFICIAL AND DEEP SURGICAL SITE INFECTIONS ON POSTOPERATIVE OUTCOMES IN NEUROSURGICAL PATIENTS: A RETROSPECTIVE COHORT ANALYSIS *(Surgery)*
Madhu Vishnu Sankar Reddy Rami Reddy, BS, The University of Toledo College of Medicine and Life Sciences

Surgical site infections (SSIs) remain a significant cause of postoperative morbidity and increased healthcare costs. In neurosurgery, these complications can profoundly impact recovery due to the intricate nature of cranial and spinal procedures. Distinguishing the effects of superficial versus deep SSIs is critical for guiding targeted prevention and management strategies.

T4 Research/Science

Poster # Title/Author

64 ROLE OF COLCHICINE AS A POTENTIAL ADJUNCTIVE THERAPY IN PATIENTS WITH CAD: A META-ANALYSIS OF RANDOMIZED CONTROLLED TRIALS *(Cardiology / Cardiovascular Disease)*
Abdallatif Dawoud, MD, University of Toledo

Inflammation plays a pivotal role in coronary artery disease (CAD). Colchicine, a potent anti-inflammatory agent that inhibits microtubule growth, has been extensively studied in this context. This meta-analysis evaluates the efficacy and safety of colchicine in CAD

65 APIXABAN VS. RIVAROXABAN THERAPY IN PATIENTS WITH ATRIAL FIBRILLATION AND ADVANCED CKD: A META-ANALYSIS *(Cardiology / Cardiovascular Disease)*
Abdallatif Dawoud, MD, Uuniversity of Toledo

The optimal direct oral anticoagulant (DOAC) therapy for patients with atrial fibrillation (AF) and advanced chronic kidney disease (CKD) (eGFR < 30 ml/min per 1.73 m^2) remains uncertain due to varying bleeding and thrombotic risk, and a lack of direct trial-based evidence. This meta-analysis compares the efficacy and bleeding risks between apixaban and rivaroxaban in patients with AF and advanced CKD.

66 "STOP A BLEED, START A HEART" CHALLENGE: A COMMUNITY FIRST-AID INITIATIVE *(Cardiology / Cardiovascular Disease)*
Timothy Chalom, Wayne State University School of Medicine

Individuals who experience a life threatening event such as a major bleed or cardiac arrest are much more likely to have positive outcomes when bystanders intervene with CPR or Stop-The-Bleed maneuvers. However, only 40% of people who experience an out-of-hospital cardiac-arrest receive CPR before EMS arrive. Studies show that education on life-saving maneuvers dramatically increases likelihood of bystander intervention and subsequent patient outcomes.

67 ACCESS TO DERMATOLOGISTS AND ITS INFLUENCE ON ECZEMA MANAGEMENT IN PEDIATRIC MEDICAID POPULATIONS *(Dermatology)*
Rita El Jbeily, BSE, Medical Student

Medicaid plays a vital role in providing healthcare coverage for vulnerable populations, particularly children who might otherwise lack access to essential medical services. As of July 2024, children comprised approximately 51.9% of Medicaid enrollees [1]. However, Medicaid coverage alone does not ensure access to care, as many providers remain unwilling to accept Medicaid patients. In 2015, a nationwide survey revealed that only 45% of primary care providers were willing to accept new Medicaid patients [2]. Atopic dermatitis, also known as eczema, is a chronic skin condition affecting up to 17% of children in the United States [3]. Left untreated, eczema can severely diminish the quality of life for pediatric patients. While the challenges faced by Medicaid enrollees in accessing specialists are increasingly recognized, there is limited research on the specific relationship between dermatologist access and treatment outcomes for children with eczema.

68 EXAMINING THE CUBAN HEALTHCARE MODEL: INSIGHTS FROM A CULTURAL EXCHANGE ON ACCESSIBILITY AND MEDICAL EDUCATION *(Health Disparities / Diversity / Equity / Inclusion / Social Determinants / Ethics)*
Sagnik Das, Raleigh Charter High School

This study explores the Cuban healthcare system and medical education through firsthand experience during a cultural exchange program in Cuba. The focus is on understanding how Cuba trains healthcare professionals and the implications of its healthcare model on accessibility and quality of care.

69 CO-DESIGN OF A DIABETES PREVENTION MOBILE UNIT FOR LATINO INDIVIDUALS LIVING IN RURAL AREAS *(Health Disparities / Diversity / Equity / Inclusion / Social Determinants / Ethics)*
Ines Gonzalez Casanova, PhD, Indiana University Bloomington

Latino individuals living in rural areas are disproportionately affected by type 2 diabetes. Yet, they are less likely than any other group to receive the preventive screenings, advice and referrals recommended by the US Preventive Service Task Force.

70 FRAGMENTS OF A CHILD: AN ANATOMICAL REVIEW OF CHILDHOOD TRAUMA *(Health Disparities / Diversity / Equity / Inclusion / Social Determinants / Ethics)*
Rimla Khan, MS, Stanford University

This project constitutes a series of paintings elucidating the impact of childhood trauma on the human anatomical and psychological landscape. The idiom of surrealism, color theory, and biology convey the intricate interplay between psychological and physical trauma. Color theory serves as a conduit for exploring the emotional and affective dimensions of trauma, as psychology posits profound connections between color associations and the human emotional spectrum. The overarching objective is to study a frequently overlooked dimension: the enduring influence of childhood mental trauma on physical anatomy. Pediatric traumas can cause changes in the genetic, psychological, and physiological landscape, stemming into adulthood. The research concludes a correlation between fetal trauma and changes in genetic code, as well as a correlation with increased negative physiological changes resulting from psychological trauma. The research also emphasizes a wide range of trauma causing similar physiological effects. In a broader societal context, this project sheds light on the inadequacy of research targeting childhood trauma.
Within the realm of medical studies, the humanities find themselves relegated to the background. However, it is imperative to recognize that a comprehensive understanding of human anatomy, when coupled with an appreciation for mental and psychological well-being, is indispensable for healthcare professionals and physicians alike. Medical research often uses complex, scientific language, making it challenging for those without a scientific background to grasp. I aim to advocate for more accessible scientific presentations, particularly in explaining medical treatments to children. Presenting my research through artwork is the first step in promoting non-conventional, inclusive communication methods. The fusion of medicine and art offers a unique perspective from which to explore medicine and patient care, transcending the boundaries of traditional scientific disciplines, illuminating the profound and enduring consequences of childhood trauma while advocating for increased awareness, research, and support for the vulnerable members of our society.

71 CHRONIC RHEUMATIC HEART DISEASE RELATED MORTALITY TRENDS IN THE USA (1999-2020) AND FUTURE PREDICTIONS USING MACHINE LEARNING *(Rheumatology)*
Danyal Butt, MD, University of Toledo Medical Center

Chronic rheumatic heart disease (RHD), a severe complication of rheumatic fever caused by untreated Group A streptococcal infections, remains a significant cause of mortality in the United States. Despite being preventable, RHD continues to contribute to morbidity and mortality, particularly in vulnerable populations. This study addresses the gap in understanding the temporal and sociodemographic trends in RHD-related mortality and seeks to forecast future trends. The study aims to provide insights to inform prevention strategies and reduce disparities in RHD-related deaths.

Poster Session
Tuesday, April 15, 2025
2:10 pm – 3:20 pm
Avenue Ballroom

CASE REPORTS

Poster # Title/Author

90 A CLINICAL EXPLORATION OF ONE OF THE LONGEST DOCUMENTED SINUS PAUSES IN AN AMBULATORY PATIENT *(Cardiology / Cardiovascular Disease)*
Alyaa Saleh, Central Michigan College of Medicine

Cardiac conduction system abnormalities, such as sinus nodal dysfunction and AV block, can lead to significant bradyarrhythmias and pauses, potentially causing symptoms like dizziness and loss of consciousness. Monitoring these rhythm disturbances is crucial, as they may evolve and indicate underlying structural heart disease or lead to more serious arrhythmias, such as ventricular asystole.

92 WOLFF-PARKINSON-WHITE SYNDROME UNMASKED BY REGADENOSON DURING MYOCARDIAL PERFUSION IMAGING *(Cardiology / Cardiovascular Disease)*
David G. Gonzalez Sanchez, MD, University of Missouri Kansas City

Myocardial perfusion imaging (MPI) aided by pharmacologic stress is a standard diagnostic modality for detecting myocardial ischemia. Regadenoson, a selective A2A adenosine receptor agonist, is commonly used due to its favorable side effect profile [1, 2]. While arrhythmias such as atrial fibrillation (AF) have been reported with regadenoson, there are no known reports in the literature or manufacturer data linking it to the induction of Wolff-Parkinson-White (WPW) syndrome. This case highlights a rare instance of WPW unmasked following regadenoson administration.

93 A RARE CASE OF POST-MI HEART FAILURE IN THE SETTING OF VENTRICULAR SEPTAL ANEURYSMS WITHOUT VSD, AORTIC INSUFFICIENCY, AND SUBAORTIC MEMBRANE: MANAGEMENT CONSIDERATIONS *(Cardiology / Cardiovascular Disease)*
David G. Gonzalez-Sanchez, MD, University of Missouri Kansas City

Management of heart failure with reduced ejection fraction (HFrEF) must be tailored to the underlying cause of cardiac dysfunction. The most common causes of HFrEF are ischemic disease, hypertensive heart disease, congenital heart disease, and valvular disease (5). Multifactorial etiologies are not uncommon, and when encountered, the degree of dysfunction attributable to each cause must be assessed with a thorough diagnostic workup and evaluation of treatment response.
Here we present the management of a patient diagnosed with HFrEF following myocardial infarction (MI) in the context of complex structural heart disease, including aortic insufficiency (AI), subaortic membrane, and post-MI septal ventricular aneurysms without VSD.

94 SEEING DOUBLE. SYMPTOMATIC BALANCE DOUBLE AORTIC ARCH IN NEWBORN, MULTIMODALITY IMAGINGS *(Cardiology / Cardiovascular Disease)*
Vithida Sueblinvong, MD, University of Illinois Chicago

Balance double aortic arch is rare only 5-10% of all Double aortic arch. We reported a surgical repair in a 6 days old baby.

95 AN UPDATED REVIEW OF DISSEMINATED HERPES ZOSTER AND PRACTICAL PEARLS *(Dermatology)*
Richard Moraga, BS, Rosalind Franklin University of Medicine & Science

Varicella zoster virus (VZV) often presents in childhood as pruritic skin lesions. Challenging cases include disseminated herpes zoster, which involves widespread lesions beyond primary dermatomes. Atypical presentations, like painless lesions and violaceous nodules, are common in immunosuppressed individuals, causing diagnostic delays and treatment errors due to its mimicry to other conditions. We present two clinical cases of disseminated herpes zoster.

96 HOPE IS A CONVERSATION: THE ROLE OF EARLY PALLIATIVE CARE IN NAVIGATING NEUROPROGNOSTICATION CHALLENGES AFTER CARDIAC ARREST *(Diagnosis or Treatment of a Disease Process or Clinical Syndromes)*
Chadane Thompson, MD, Englewood Hospital and Medical Center

Neuroprognostication involves predicting the potential for neurological recovery from disorders of consciousness caused by brain injury. Following neuroprognostication that indicates poor outcomes after cardiac arrest, families and surrogate decision-makers of comatose survivors are often confronted with difficult decisions regarding withdrawal of life-sustaining treatment (WLST). A palliative care framework that recognizes the challenges of neuroprognostication and supports complex ethical and culturally sensitive decision-making may help curtail premature WLST in patients with falsely pessimistic prognoses.

97 UNRELENTING HEADACHE: A PUZZLING CASE IN A YOUNG FEMALE *(Diagnosis or Treatment of a Disease Process or Clinical Syndromes)*
Farwah Shah, MD, MPH, Insight Hospital and Medical Center

Headaches are a common clinical complaint, with migraines and tension-type headaches being the most frequently encountered primary types. Secondary headaches, which arise from underlying pathologies, can present diagnostic challenges. This case report focuses on a rare secondary headache associated with cerebellar tonsillar ectopia (CTE) due to idiopathic intracranial hypertension (IIH). Although CTE may mimic Chiari malformation, it is less frequently addressed in the literature. This case report emphasizes the importance of detailed imaging and thorough clinical evaluation to differentiate between IIH-related ectopia and Chiari I malformation, aiming to enhance awareness and management of this complex condition.

99 A CASE OF NON-KERATINIZING SQUAMOUS CELL CARCINOMA *(Diagnosis or Treatment of a Disease Process or Clinical Syndromes)*
Nathan S. Brar, Dignity Health

Throat Cancer is a rare disease, with squamous cell carcinoma of the oropharynx being the most common form of oropharyngeal cancer. Squamous Cell Carcinoma is closely associated with Human Papillomavirus (HPV) infection, typically affecting men in their 60s. The case presented today is about a 73-year-old Caucasian Male who was admitted to the hospital due to experiencing a variety of symptoms regarding the ear and throat. The patient after this, the patient had an episode of small bowel obstruction, which warranted an NG tube placement, which then caused the patient to experience a sore throat. A few weeks later, the patient developed painful swallowing and right-sided neck swelling, resulting in a 2cm right peritonsillar/parapharyngeal abscess. ENT drained the abscess, and pathology revealed HPV-16 but no sign of malignancy. Unfortunately, the patient's symptoms continued to worsen, leading to an excision of the lymph nodes to be taken and confirm that the patient has Non-Kerantinizing Squamous Cell Carcinoma of the Oropharynx.

100 EFFECTIVENESS OF OMT LYMPHATICS AND FUROSEMIDE IN RESOLUTION OF MASSIVE SEROMA *(Diagnosis or Treatment of a Disease Process or Clinical Syndromes)*
Shreya Tamatam, Western University of Health Scienes

Gluteal augmentation and lift, or a Brazilian Butt Lift (BBL), is an increasingly popular cosmetic procedure that patients pursue for a more lifted and defined shape to their buttocks. Post-op complications include localized swelling and seroma, which are routinely managed with compression garments (Dixit and Wagh, 2013).

101 A RARE PRESENTATION OF PAINLESS PANCREATITIS IN THE SETTING OF PANNICULITIS AND POLYARTHRITIS *(Gastroenterology / Clinical Nutrition)*
Amani Masoud, DO, Franciscan Health Olympia Fields

Pancreatitis-Panniculitis-Polyarthritis (PPP) syndrome is a rare presentation of acute pancreatitis comprising external manifestations of polyarthropathy and panniculitis1. It is often only identified when patients present with the triad of gastrointestinal symptoms, joint pain and cutaneous changes. In patients with arthritis and skin changes alone, the diagnosis of acute pancreatitis in PPP syndrome may be missed. Our case involves a patient with painless acute pancreatitis in the setting of panniculitis and polyarthritis. This highlights the importance of assessing for acute pancreatitis in patients with panniculitis and polyarthropathy, since prompt initiation of treatment reduces the morbidity and mortality of acute pancreatitis.

102 GALLBLADDER ADENOMYOMATOSIS PRESENTING WITH INTRACTABLE NAUSEA AND VOMITING *(Gastroenterology / Clinical Nutrition)*
Olaniyi Fadeyi, West Anaheim Medical Center

Introduction
Gallbladder adenomyomatosis (GAM) is a benign disease of the gallbladder with an excellent prognosis in most patients. [1] It is characterized by gallbladder wall thickening with a typical inward folding of the epithelium thereby forming Rokitansky-Aschoff sinuses. [2] While it may be found at any age, peak incidence of GAM is in the sixth and seventh decade of life. [3] GAM is a common incidental finding on routine abdominal ultrasound performed for other unrelated health issues. [4] Asymptomatic patients are usually monitored without any need for intervention. However, symptomatic patients are treated with cholecystectomy. Although, presenting symptoms in symptomatic patients may be nonspecific, abdominal pain, nausea, vomiting, and fever are common. [5] Herein, we report a case of

symptomatic GAM seen in a hospitalized patient whose predominant symptoms were nausea, vomiting and right upper quadrant abdominal pain.

104 IRON DEFICIENCY ANEMIA SECONDARY TO NEGLECTED GIANT SKIN CANCERS; HIGHLIGHTING THE ROLE OF PSYCHOSOCIAL BARRIERS IN PATIENT OUTCOMES-A CASE SERIES *(Health Disparities / Diversity / Equity / Inclusion / Social Determinants / Ethics)*
Aren Dermarderosian, BS, MS, University of California, Los Angeles

Skin cancer is the most common type of cancer worldwide, with approximately 3 million new cases annually. Basal cell carcinoma (BCC) is the most prevalent subtype, accounting for 80% of all cases, followed by squamous cell carcinoma (SCC). Basosquamous carcinoma (BSC), a rare and aggressive subtype, exhibits characteristics of both BCC and SCC. Tumors measuring >5 cm are classified as "giant" and often arise due to neglect of alarming skin growths, influenced by psychosocial factors (PF) and poor health literacy (HL). While discernible skin lesions are a primary sign of skin cancer, symptomatic anemia is an extremely rare presentation, with only a few cases documented in the literature. We present two cases of iron deficiency anemia (IDA) secondary to giant BSC and SCC, highlighting the role of psychosocial challenges in exacerbating these conditions and the importance of addressing these barriers to improve outcomes.

98 FROM TEQUILA TO THROMBOSIS: A YOUNG MALE'S UNLIKELY JOURNEY FROM ALCOHOLIC PANCREATITIS TO THROMBOTIC THROMBOCYTOPENIC PURPURA *(Hematology and Oncology / Bone Marrow Transplant)*
Farwah Shah, MD, MPH, Insight Hospital and Medical Center

Thrombotic Thrombocytopenic Purpura (TTP) is a rare, life-threatening thrombotic microangiopathy characterized by the formation of blood clots in small vessels throughout the body. Its hallmark clinical features include fever, thrombocytopenia, neurological abnormalities, microangiopathic hemolytic anemia (MAHA), and renal failure. TTP can be either inherited, resulting from mutations in the ADAMTS13 gene inherited from both parents, or acquired, often triggered by autoimmune conditions, cancer, medications, HIV, infections, pregnancy, or stress [1]. Here, we present a rare case of acute pancreatitis-induced TTP, a condition that, while fatal if untreated, is treatable with urgent diagnosis and therapy [2,3].

103 ABDOMINAL PAIN AND SEVERE BILATERAL HYDRONEPHROSIS CAUSED BY METASTATIC TESTICULAR SEMINOMA *(Hematology and Oncology / Bone Marrow Transplant)*
Olaniyi Fadeyi, West Anaheim Medical Center

Testicular cancer is a very common malignancy seen among males between 15-35 years old. [1] Certain risk factors which may include cryptorchidism, testicular trauma, family history of testicular cancers and germ cell tumor may be significant to the development of testicular malignancy. As previously documented, history of cryptorchidism is very significant to the development of testicular cancers. [2] Although testicular seminoma is chemosensitive, late presentation may constitute a significant challenge to treatment and prognosis. It is noteworthy that there are currently no generally acceptable guidelines to screen for testicular cancers. Testicular self-examination is only recommended by United States Preventive Services Task Force (USPSTF) in the context of history of cryptorchidism and germ cell tumor since it has not been generally proven to improve outcomes. [3] And regardless of the common presentation of testicular cancers as mass and swelling, several forms of atypical presentations in the context of metastatic testicular seminoma have been documented in previous studies. Here, we present a case of a 44-year-old male who was diagnosed with testicular seminoma causing abdominal pain and bilateral hydronephrosis.

105 A CASE REPORT OF RUXOLITINIB DISCONTINUATION SYNDROME LEADING TO RAPID MULTI-ORGAN FAILURE *(Hematology and Oncology / Bone Marrow Transplant)*
Danyal Butt, MD, University of Toledo Medical Center

Ruxolitinib (RTX) is a JAK1/JAK2 inhibitor approved for treating myelofibrosis (MF) and polycythemia vera (PV). Upon discontinuation, patients may experience Ruxolitinib Discontinuation Syndrome (RDS), often presenting with complications such as splenomegaly, cytopenia, acute kidney injury, and worsening of MF. Severe complications such as ARDS, tumor lysis syndrome, and septic-like shock can rarely occur. Although RDS is documented, rapid progression to multi-organ failure and death after RTX discontinuation is extremely rare. We report a fatal case of a 73-year-old male who developed multi-organ failure after abrupt RTX discontinuation, emphasizing the importance of vigilant management.

106 AN UNUSUAL CASE OF METASTATIC CECAL ADENOCARCINOMA PRESENTING WITH WHIPPLE'S TRIAD *(Hematology and Oncology / Bone Marrow Transplant)*
Dileep Mandali, MD, Tulane University School of Medicine

Hypoglycemia in liver cancer arises from the liver's inability to meet the body's glucose demands, as the tumor extensively replaces normal liver parenchyma. Additionally, elevated production of insulin-like growth factor (IGF) contributes to this condition. It is

commonly associated with both islet cell and non-islet cell tumors, with a higher prevalence in non-islet cell tumors due to paraneoplastic syndrome and the tumor's increased metabolic demands. Here, we present a case of non-islet cell tumor that confounded the findings typical of islet cell tumor on imaging (ie, Whipple's Triad), thereby highlighting the importance of thorough work-up for treatment and longterm management.

107 CTLA-4 HAPLOINSUFFICIENCY: REPORT OF SUSTAINED RESPONSE TO LONG TERM TREATMENT WITH ABATACEPT *(Immunology / Allergy)*
Nishant R. Tiwari, MD, Univeristy of Oklahoma Health Peggy and Charles Stephenson Cancer Center

Cytotoxic T-lymphocyte associated protein 4 (CTLA-4) haploinsufficiency (CHAI) is a rare immune dysregulation disorder with a spectrum of phenotypic presentations. Lymphopenia, autoimmune hemolytic anemia (AIHA), immune thrombocytopenia (ITP), enteropathy, increased susceptibility to malignancies, hypogammaglobulinemia, and neurological issues are observed in patients with CHAI at varying frequencies and severities. [1] We report a case of CHAI in a young adult treated with abatacept, showing sustained response and good tolerability to the treatment.

108 ITCHING FOR AN ANSWER: THE FIRST KNOWN CASE OF EPIDERMOLYSIS BULLOSA ACQUISITA (EBA) IN THE SETTING OF ITCH DEFICIENCY *(Immunology / Allergy)*
William Prieto, BS, MS, Wester Michigan University Homer Stryker M.D. School of Medicine

ITCH deficiency, a rare autosomal recessive disorder, manifests as a syndrome of short stature, developmental delay, hypotonia, syndromic facial features, and can include chronic lung disease, recurrent infections, and several autoimmune diseases, including hypothyroidism, hepatitis, enteropathy, and diabetes mellitus. Only 12 cases have been reported to date, caused by mutations of ITCH (MIM 606409) on 20q11, leading to ITCH E3 ubiquitin ligase deficiency. E3 ubiquitin ligases regulate all protein metabolism by tagging proteins for degradation by proteasomes. Dysfunction in E3 ligases is thought to regulate immunity by allowing survival of autoreactive T-cells, leading to loss of self-tolerance and subsequent autoimmunity. Treatment of ITCH deficiency usually requires significant immunosuppression and infection control; one successful stem cell transplant has been reported.

91 NEONATAL MENINGITIS DUE TO STREPTOCOCCUS PNEUMONIAE: AN UNCOMMON CLINICAL CHALLENGENEONATAL MENINGITIS DUE TO STREPTOCOCCUS PNEUMONIAE: AN UNCOMMON CLINICAL CHALLENGE *(Infectious Disease / Immunization)*
Alyaa Saleh, Central Michigan College of Medicine

Neonatal infections within the first 72 hours of life are often acquired perinatally as the infant traverses the birth canal. Group B streptococcus is the leading cause of early-onset neonatal sepsis, largely due to perinatal transmission from a colonized mother (1). Escherichia coli is another common perinatally acquired infection, especially in the presence of chorioamnionitis (2). Streptococcus pneumoniae (S. pneumoniae) infections in neonates are uncommon (1%–11% of neonatal sepsis), and when they occur, they are associated with substantial morbidity and mortality (3). In this case, we report early neonatal respiratory distress due to meningitis caused by S. pneumoniae.

109 DRUGS ON THE BRAIN: TRIMETHOPRIM-SULFAMETHAZINE INDUCED ASEPTIC MENINGITIS FOLLOWING TRAUMATIC KNEE ARTHROTOMY *(Infectious Disease / Immunization)*
Kendall Johnson, Western Michigan University Homer Stryker M.D. School of Medicine

Trimethoprim-sulfamethoxazole (TMP-SMX) is a frequently prescribed antibiotic; however, it may be associated with a diverse range of adverse effects that could potentially be misinterpreted as the exacerbation of an underlying infectious process. Drug-induced aseptic meningitis (DIAM) presents a particularly challenging clinical scenario when treating systemic infections. Symptoms such as cephalalgia, cervical rigidity, and pyrexia may raise concerns regarding meningitis and the progression of the underlying infection. The pathophysiology of this delayed hypersensitivity reaction remains incompletely elucidated; nevertheless, direct meningeal irritation has been proposed as a potential mechanism of DIAM. We present the case of a previously healthy 11-year-old male treated for septic arthritis with TMP-SMX, who developed pyrexia, meningeal signs, and knee pain on the ninth day of therapy, attributable to his antibiotic regimen.

110 CYCLICAL FEVER OF UNKNOWN ORIGIN IN AN 84-YEAR-OLD PATIENT: RESOLUTION WITH DOXYCYCLINE *(Infectious Disease / Immunization)*
Lea Kobrossy, North Dakota State University

Fever of unknown origin (FUO) is classically defined as fever exceeding 38.3 °C (101 °F) for more than three weeks without identified source despite basic diagnostic workup. In older and immunocompromised patients, atypical infections, malignancies, and non-infectious inflammatory conditions should be considered. Myelodysplastic syndrome (MDS) is a clonal disorder of hematopoietic stem cells characterized by ineffective hematopoiesis, leading to decrease production of normal blood cells. Although fevers in MDS could be

attributed to common infections, the possibility of a paraneoplastic or atypical infectious etiologies should be investigated, specifically when standard diagnostic tests fail to identify an etiology. This report describes an 84-year-old woman who presented with a pattern of weekly recurring high fevers. Extensive testing excluded common pathogens, including tick-borne diseases, and she demonstrated clinical resolution after a therapeutic trial of doxycycline which was chosen for its intracellular activity against many zoonotic atypical infections which might present with cyclic fevers.

111 DISSEMINATED AND PULMONARY BLASTOMYCOSIS IN A PEDIATRIC PATIENT OF CENTRAL NEW YORK *(Infectious Disease / Immunization)*
Maxence Isabelle Marie Gilles, DO, SUNY Upstate Medical University

Blastomycosis is an infection caused by Blastomyces spp., a dimorphic fungus that lives primarily in soil and decaying plant matter. It is endemic in the midwestern, south-central, and southeastern United States. Cases have been reported outside of endemic regions. Half of infections are symptomatic, presenting as acute or chronic pneumonia and rarely progressing to acute respiratory distress syndrome (ARDS) and disseminated disease.

112 FIREARM PROJECTILE PENETRATING HEAD TRAUMA *(Neurology)*
Jacqueline Rodríguez, MD, Enrique Garces Hospital

Penetrating traumatic brain injury is a rare medical emergency, accounting for 0.4% of all cranial injuries, with a mortality rate of up to 90% (1,2). Over 90% of these injuries are caused by interpersonal violence, predominantly affecting males and the left side of the head, as most assailants are right-handed (3). Physiopathologically, the projectile causes damage through direct penetration and pressure waves that travel through brain tissue. These waves trigger an inflammatory process that can lead to irreversible damage or death. The temporal and orbital regions are particularly vulnerable to such injury (3). Patients who survive to hospital admission require immediate evaluation with non-contrast cranial computed tomography (CT) and assessment with the Glasgow Coma Scale (GCS) to determine the need for surgical intervention (4,5).

113 SHADOW CAST BY STATIN: NAVIGATING MYOPATHY *(Rheumatology)*
Israr Khan, MD, Insight Hospital and Medical Center

Statins are widely prescribed lipid-lowering medications that provide significant benefits for preventing and treating cardiovascular diseases. Although considered safe, muscle-related side effects ranging from myalgia to rhabdomyolysis, particularly with high-dose statin usage, are well documented. Statin-associated autoimmune myopathy (SAAM) is rare; however, this devastating complication can occur at any time after statin initiation.(1,2)

114 CROHN'S DISEASE IN REMISSION DISGUISED AS RECURRENT LEUKOCYTOCLASTIC VASCULITIS: A RARE CLINICAL PRESENTATION *(Rheumatology)*
Rayan Gasim, MD, Hackensack University Englewood Hospital

Leukocytoclastic vasculitis (LCV), a small-vessel vasculitis typically presenting with a painful rash, is a rare but known extraintestinal manifestation of Crohn's disease. LCV generally occurs during active disease but is seldom seen during periods of remission. The case described is unique in that a patient with long-standing Crohn's disease currently in remission presented with recurrent, self-limiting LCV despite no active gastrointestinal (GI) symptoms. This report highlights an atypical presentation and discusses both the diagnostic and management challenges.

T0 Research/Science

Poster # Title/Author

115 MATERNAL HEMOGLOBIN A1C IS ASSOCIATED WITH NEWBORN BLOOD PRESSURE *(Cardiology / Cardiovascular Disease)*
Colman I. Freel, BS, University of Nebraska Medical Center

Diabetes mellitus (DM) affects over 16% of pregnancies. Infants of diabetic mothers (IDM) have an increased risk of developing cardiovascular diseases, with evidence suggesting that cardiovascular physiology, particularly blood pressure, is altered early in life. However, there is a paucity of research evaluating these changes during the neonatal period. Several forms of DM complicate pregnancies, each with distinct pathophysiology and impacts on newborn health. The varying clinical criteria and testing to diagnose DM can make it challenging to study impacts on newborns; however, there are measures of hyperglycemia that can standardize studies. Hemoglobin A1c (HbA1c) remains the gold standard for evaluating glycemic burden, reflecting the average blood glucose level over ~3 months. This method hinges on glucose modifications to cellular proteins, which affects various cell types. If unchecked, hyperglycemia-

driven modifications can induce cellular dysfunction, damage, and phenotypic shifts, particularly in endothelial cells, which line blood vessels and regulate blood pressure. Given that glucose crosses the placenta, maternal hyperglycemia may impact fetal endothelial cells. Therefore, we hypothesized that higher maternal HbA1c would correlate with increased newborn blood pressure, reflecting potential impacts on neonatal endothelial cells.

116 DERMAL EXPOSURE TO MICROCYSTIN-LR THICKENS DERMAL LAYERS IN VIVO AND DISRUPTION OF STRUCTURAL AND IMMUNE SIGNALING IN VITRO *(Dermatology)*
Benjamin W. French, University of Toledo

Harmful algal blooms (HABs) are on the rise globally, including throughout the Great Lakes region. HABs produce cyanotoxins, with microcystin-LR (MC-LR) being one of most prevalent and potent of over 300 microcystin congeners. Dermal contact is one of the most common exposure routes to HAB cyanotoxins, and dermatologic symptoms represent one of the most common complaints after HAB exposure. Diseases such as chronic kidney disease (CKD) and atopic dermatitis (AD) can disrupt the skin barrier, potentially increasing susceptibility to MC-LR. Previous work has shown that pre-existing diseases impacting the kidney increase susceptibility to MC-LR. Yet, there is limited research on the dermal route of exposure, even in healthy skin. We sought to evaluate the impact of MC-LR on the skin barrier using in vivo and in vitro models.

117 EVALUATION OF PROTOPORPHYRIN IX FLUORESCENCE IMAGING FOR BURN DEPTH DIAGNOSIS IN PORCINE MODELS *(Diagnosis or Treatment of a Disease Process or Clinical Syndromes)*
Bailey Ann. Donahue, BS, University of Wisconsin School of Medicine and Public Health

Burn injuries affect nearly half a million people annually in the United States, impacting individuals of all ages and often leaving survivors with permanent scarring and adverse long-term sequelae. A key objective in modern burn management is reducing scarring for long-term wellbeing and quality of life. Achieving this goal requires acute determination of burn depth and regenerative capacity of the injured tissue. However, clinical visual assessment, the current standard for determining burn depth, is prone to errors, with inaccuracies occurring in 25-30% of cases. An objective and reliable method for burn depth diagnosis is needed to assist physicians in proper treatment planning.

118 NOVEL PROTEIN BINDERS: TARGETING TRANSFERRIN RECEPTOR FOR THERAPEUTIC APPLICATIONS *(Diagnosis or Treatment of a Disease Process or Clinical Syndromes)*
Denise Peng, Yale University

Transferrin receptor (TfR), a transmembrane protein responsible for ferric metabolism, is a key target for disorders implicated with iron dysregulation, ranging from anemia to glioblastoma. Accordingly, Huang et al. (2024) designed a protein binder (Pb) that demonstrated endocytosis and lysosomal trafficking in U-251MG glioblastoma cells. This de novo engineering of Pbs, peptides typically shorter than 65 amino acids (Cao et al., 2022), represents an innovative artificial intelligence technology that circumvents the limitations of traditional monoclonal antibodies (mAbs), namely off-target effects and low stability. In accessing sterically hindered sites while balancing shape complementarity and maximizing tautomer interaction, Pbs can achieve precise targeting of disease-associated molecules and pathways. Here, TfR is an especially promising target due to the broader implications of cellular iron uptake including mitochondrial function and DNA synthesis. Expanding these applications, targeting TfR to fine-tune iron availability can reduce oxidative stress, alleviating tissue damage in Duchenne muscular dystrophy (Alves et al., 2022). We thus hypothesize that validating current and creating novel Pb designs for uptake into muscle cells via TfR internalization can pave the way for new therapeutic delivery mechanisms.

119 MARINOBUFAGENIN AS A POTENTIAL BIOMARKER FOR PREECLAMPSIA AND ITS THERAPEUTIC TARGET *(Diagnosis or Treatment of a Disease Process or Clinical Syndromes)*
Mehruba Zaman, BS, Virginia Commonwealth University School of Medicine

Marinobufagenin (MBG), a cardiotonic steroid, is not only found to be elevated in preeclampsia (preE) but also may be a potential causative agent for preE. In previous studies, high levels of urinary MBG were found in patients with pre-eclampsia, which is defined as an onset of hypertension and proteinuria during pregnancy. Its pathogenesis lies in MBG causing deleterious signaling and an anti-angiogenic milieu in cytotrophoblasts (CTB) - which are normally involved in vascular remodeling during placental development. We evaluated in preE rat models the effects of anti-MBG human monoclonal antibody on cellular signaling in CTBs, as well as on prepartum blood pressure, kidney function, fetal rat birth weight along with collecting a serial measurement of MBG in human subjects during their pregnancy.

120 ANTI-FIBROTIC THERAPY FOR PRIMARY SCLEROSING CHOLANGITIS *(Gastroenterology / Clinical Nutrition)*
Mariam Khwaja, BS, Texas A&M University School of Medicine

Primary sclerosing cholangitis (PSC) is a rare and severe condition in which chronic bile duct injury prevents bile from draining out of the liver properly and thus leads to liver fibrosis. Currently, there are no approved therapeutics for PSC, and the only definitive cure is liver transplant. Hence, an urgent need exists to find effective treatments, particularly interventions that can prevent, reduce, and potentially reverse liver fibrosis.
H2 relaxin (serelaxin) acts on the G protein-coupled receptor (GPCR) 'Relaxin Family Peptide Receptor 1' (RXFP1) to mediate vasodilatory and cardioprotective effects in patients with acute heart failure (AHF). However, the long-term beneficial effects of serelaxin in AHF are likely related to its strong anti-fibrotic effects that have been found in animal models of multiple diseases involving fibrosis - including in cardiac, pulmonary, renal, and hepatic organ systems. Recent data suggest that serelaxin may be a promising treatment for diseases characterized by fibrosis. Despite its enormous potential, serelaxin has a short half-life in vivo, is difficult to synthesize, and cross-reacts with the related receptor, RXFP2. In addition, the cAMP-mediated actions of serelaxin may be associated with deleterious long-term effects. To address these limitations, we have identified a novel B-chain-only peptide variant of serelaxin, B7-33, which is RXFP1-specific and ameliorates fibrosis via cell-specific effects on fibroblasts. B7-33 is less expensive to manufacture, and, being a single chain peptide, far easier to functionalize to improve in vivo stability and efficacy.

121 TARGETING MUTATED HISTONE H3.3 WITH HDAC INHIBITORS: ENHANCING CHROMATIN ACCESSIBILITY TO SUPPRESS DIFFUSE INTRINSIC PONTINE GLIOMA (DIPG) PROGRESSION *(Genetic and Molecular Medicine)*
Rimla Khan, MS, Stanford University

Diffuse Intrinsic Pontine Glioma (DIPG) is a rare and highly aggressive pediatric brain tumor, primarily affecting children between the ages of 5 and 10. Located in the pons, a region crucial for essential functions such as breathing, heart rate regulation, and motor control, DIPG is characterized by its infiltrative nature, which makes surgical removal impossible. The prognosis remains grim, with a median survival of approximately 11 months post-diagnosis. The tumor's rapid progression leads to devastating neurological symptoms, including difficulty walking, talking, swallowing, and, ultimately, respiratory failure.

At the molecular level, DIPG is strongly associated with mutations in the H3F3A gene, leading to the H3.3K27M mutation, a lysine-to-methionine substitution at position 27 of histone H3.3. This mutation disrupts normal epigenetic regulation by altering chromatin structure, silencing tumor suppressor genes, and activating oncogenic pathways, which contribute to uncontrolled tumor proliferation. Additionally, DIPG cells acquire stem-cell-like properties, making them highly resistant to conventional therapies such as chemotherapy and radiation. Histone acetylation, a key regulatory mechanism for gene expression, is also affected in DIPG, further promoting malignancy by allowing the upregulation of oncogenes and silencing of tumor suppressors.

Due to its location, infiltrative growth pattern, and resistance to standard treatments, DIPG remains one of the most challenging pediatric malignancies. Current treatment strategies focus on symptom management and radiation therapy to temporarily slow progression. However, emerging research into targeted molecular therapies, immunotherapy, and epigenetic modifications aims to develop more effective treatments for this devastating disease. Understanding the role of histone mutations and the dysregulation of chromatin modifications is critical in advancing DIPG research and improving patient outcomes.

122 INVESTIGATING THE INTERACTIONS BETWEEN TREM2 AND COMPLEMENT C1Q PROTEIN THAT ARE IMPORTANT IN NEURODEGENERATIVE DISEASES *(Immunology / Allergy)*
Cynthia Zhi, Washington University in St. Louis School of Medicine

TREM2 is a signaling receptor expressed on microglia that has emerged as an important drug target for Alzheimer's disease and other neurodegenerative diseases. While a number of TREM2 ligands have been identified, little is known regarding the structural details of how they engage. The complement cascade initiating protein C1q was recently identified as a ligand for TREM2. The complement pathway is involved in pruning excess synapses, which becomes abnormally activated in Alzheimer's disease, contributing to neurodegeneration. C1q binding to TREM2 prevents activation of the complement pathway and subsequent synapse pruning. Due to the potential importance in Alzheimer's diseases, we are interested in studying the interactions between TREM2 and complement C1q protein.

123 IDENTIFYING AQUAPORIN 3 (AQP3) BINDING PARTNERS IN KAPOSI SARCOMA HERPES VIRUS (KSHV) LATENTLY INFECTED CELLS *(Infectious Disease / Immunization)*
Christopher N. Kywe, BS, MS, Rosalind Franklin University

Kaposi Sarcoma Herpes Virus (KSHV) is responsible for causing Kaposi Sarcoma, primary effusion lymphoma, Castleman's disease, and other cancers. It has a two-part lifecycle involving latent and lytic phases. Although the functions of all viral proteins encoded by the KSHV genome are known, there are currently no specific treatments to prevent KSHV infection.

124 MRSA DYSREGULATES THE AUTOPHAGY-LYSOSOMAL PATHWAY IN LUNG ENDOTHELIAL CELLS *(Pulmonary / Critical Care)*

Eleftheria Letsiou, PhD, University of Illinois Chicago

Acute lung injury (ALI) caused by methicillin-resistant Staph. aureus (MRSA) is characterized by lung endothelial cell (EC) dysfunction. Previous studies have demonstrated an important role for autophagy in ALI pathophysiology, and bacteria such as MRSA can disrupt this important cellular process. During autophagy, autophagosomes fuse with lysosomes to degrade their content. Disruptions in normal lysosomal functions lead to autophagy inhibition and accumulation of autophagosomes, which are hallmark features of various diseases. Whether this critical autophagy/lysosomal axis is dysregulated in lung EC in MRSA-induced ALI is unexplored.

125 CHARACTERIZING A TWO-HIT MURINE PULMONARY HYPERTENSION MODEL OF PHENYLHYDRAZINE-INDUCED HEMOLYSIS AND HYPOXIA, ECHOCARDIOGRAPHIC FINDINGS AND MARKERS OF ENDOTHELIAL DYSFUNCTION *(Pulmonary / Critical Care)*
Nathaniel H. Schwartz, MD, University of Illinois Chicago

Pulmonary hypertension (PH) is a severe complication of sickle cell disease (SCD) with limited therapeutic options, and experimental animal models of SCD-PH are lacking. Hemolytic byproducts are known to be toxic to the pulmonary endothelium, while hypoxia has strong effects on vascular smooth muscle. We have previously shown preliminary data to support a novel murine model of PH using the toxin phenylhydrazine (PHZ) to induce hemolytic anemia and combining this with hypoxia.

126 HEMIN AND HIGH FLOW UNIQUELY CONTRIBUTE TO ENDOTHELIAL DYSFUNCTION IN THE PATHOGENESIS OF PULMONARY HYPERTENSION IN SICKLE CELL DISEASE *(Pulmonary / Critical Care)*
Taylor Ramsaroop, MD, University of Illinois Chicago

Pulmonary hypertension (PH) is a severe complication of sickle cell disease (SCD) and is an independent predictor of mortality. Increased flow, pathologic shear stress, and hemolysis have each been shown to influence mediators of endothelial dysfunction, yet the unique interplay of these conditions in SCD-PH is unknown. We have previously shown that hemin, a product of hemolysis, causes endothelial dysfunction under static conditions.

127 RADIATION-INDUCED LUNG INJURY IS MEDIATED BY ENDOTHELIAL CELL INTEGRIN BETA 4 *(Pulmonary / Critical Care)*
Weiguo Chen, MD, MPH, University of Illinois Chicago

Radiation-induced lung injury (RILI), a common complication in patients administered thoracic radiotherapy, is characterized by increased lung endothelial cell (EC) inflammation and permeability, and is associated with significant morbidity and mortality. Although the etiology of RILI is poorly understood, a potential molecule of interest in this context is integrin beta 4 (ITGB4) which we have previously identified as a mediator of EC permeability and lung inflammatory responses in acute lung injury. Accordingly, we hypothesized that ITGB4 also mediates lung injury induced by radiation.

128 CITRULLIATED AND MALONDIALDEHYDE-ACETALDEHYDE MODIFIED FIBRINOGEN PROMOTES MACROPHAGE ACTIVATION IN RHEUMATOID ARTHRITIS *(Rheumatology)*
Wenxian Zhou, BS, University of Nebraska Medical Center

Rheumatoid arthritis (RA) is characterized by persistent synovial inflammation, leading to progressive joint destruction, disability, and premature mortality.(1) Additionally, patients with RA are at increased risk of extra-articular complications, such as interstitial lung disease and cardiovascular disease.(2) However, mechanisms underlying these pro-inflammatory and pro-fibrotic complications remain incompletely understood. Recent studies have demonstrated that citrullinated (CIT) and malondialdehyde-acetaldehyde (MAA) modified proteins are enriched in joint and lung tissues of RA patients.(3,4) These CIT-MAA co-modified proteins directly activate macrophages, triggering pro-inflammatory and pro-fibrotic responses.(5) However, the specific macrophage intracellular signaling pathways and cytokines released that drive these cellular responses remain unknown (Figure 1).

T1 Research/Science

Poster # Title/Author

129 CLEANING PRACTICES IN ADULTS WITH RHINITIS *(Immunology / Allergy)*
Aero Cavalier, BA, University of Chicago

Rhinitis (hay fever) is a chronic condition that impacts approximately 10-30% of the adult population1. Household cleaning may be a trigger for rhinitis symptoms. Despite this, household cleaning practices of adults with rhinitis are not well-described.

130 FIBROTIC PULMONARY SARCOIDOSIS IS CHARACTERIZED BY DISTINCT PERIPHERAL CELL-CELL COMMUNICATION NETWORKS: IMPLICATIONS FOR IMMUNE ACTIVATION AND FIBROSIS *(Pulmonary / Critical Care)*
Christen Vagts, MD, University of Illinois Chicago

Approximately 20% of subjects with pulmonary sarcoidosis progress to a chronic form marked by pulmonary fibrosis. While evidence highlights the dysregulation of various peripheral blood mononuclear cells (PBMCs), namely CD14+ classical monocytes (CM) and various CD4+ T cells, to drive inflammation, how this triggers fibrosis remains poorly understood.

T2 Research/Science

Poster # Title/Author

131 CAN WE IMPLANT AND PACE WITH A NOVEL INTERCOSTAL EXTRAVASCULAR TEMPORARY PACING LEAD? *(Cardiology / Cardiovascular Disease)*
Aidan Faller, BS, Midwestern University

A novel intercostal extravascular pacing lead (EV-TP) (AtaCor Medical, San Clemente, CA) iteratively designed to function with a market-released temporary pacemaker has been developed for pacing. The distal end of the lead is designed to contact the pericardium from within the mediastinum. Clinical data have been analyzed to characterize procedure success and pacing capture thresholds up to 2 days after insertion using the final lead design.

132 NAVIGATING THE RETURN OF INDIVIDUAL RESEARCH RESULTS: INSIGHTS FROM A MULTI-SITE COHORT STUDY *(Pulmonary / Critical Care)*
Denise Kent, PhD, APRN, University of Illinois Chicago

The return of individual research results (IRR) to participants presents opportunities and challenges. As the National Academy of Science, Engineering and Medicine (NASEM) published, there is potential value in sharing clinically relevant results with participants. However, with minimal guidelines and no best practices for how to return IRRs, research teams face complex ethical, logistical, and practical considerations. This multi-site study (UIC IRB No. 2024- 0782)describes the return of IRRs (e.g., lab, spirometry, chest CT) within a NHLBI funded study, Lung Health Cohort (LHC) (U01 HL146408-01). The LHC study is conducted by the American Lung Association, Airways Clinical Research Centers.

T3 Research/Science

Poster # Title/Author

133 THE PROGNOSTIC VALUE OF CORONARY ARTERY CALCIFICATION IN HEART FAILURE WITH PRESERVED EJECTION FRACTION *(Cardiology / Cardiovascular Disease)*
Alex J. Kloster, MD, University of Toledo

Coronary artery calcification (CAC) is a well-established risk factor for myocardial infarction (MI) and heart failure (HF) events, but its relationship with outcomes in patients with heart failure with preserved ejection fraction (HFpEF) is not well established.

134 LEAD EXTRACTION EXPERIENCE WITH AN INVESTIGATIONAL INTERCOSTAL EV-ICD LEAD *(Cardiology / Cardiovascular Disease)*
Joseph K. Poskin, Midwestern University Chicago College of Osteopathic Medicine

An investigational intercostal extravascular ICD (EV-ICD) lead (AtaCor Medical; San Clemente, CA) is under development for use with commercially available ICDs. Completed clinical investigations of 1st and 2nd generation EV-ICD leads included planned lead removals for all subjects.

135 ASSOCIATION OF PHYSICAL THERAPIST CHARACTERISTICS WITH PT NON-TREATMENT IN HOSPITALIZED PATIENTS WITH ACUTE MEDICAL ILLNESS *(General Medicine)*
Mahnoor Baig, BS, University of Chicago

Physical therapy (PT) is important for treatment and prevention of hospital-associated disability and functional decline, but PT consistency is difficult in hospital settings. Missing PT sessions, known as “PT non-treatment”, may compromise patients’ functional recovery and decrease therapist efficiency. Little is known about therapist-related factors influencing PT non-treatment.

136 PRONTO-EYE: DESIGNING A RIDESHARE TRANSPORTATION INTERVENTION TO IMPROVE VISIT ADHERENCE IN PATIENTS WITH DIABETIC RETINOPATHY *(Health Disparities / Diversity / Equity / Inclusion / Social Determinants / Ethics)*
Angelica Scanzera, OD, MPH, University of Illinois Chicago

Diabetic retinopathy (DR) is the leading cause of preventable vision loss in the U.S. and disproportionately affects minorities and people with limited socioeconomic resources. Prompt diagnosis and treatment can prevent visual impairment by up to 90%, making adherence to visits critical. Increased neighborhood-level social vulnerability is associated with an increased risk of missed ophthalmology visits, with transportation being a consistent barrier in this population.

137 THE HEALTH AND LIFESTYLE IMPACTS OF MCAT PREPARATION ON PRE-MEDICAL STUDENTS *(Health Disparities / Diversity / Equity / Inclusion / Social Determinants / Ethics)*
Dorsa Mohammadigerani, BS, California State University - Los Angeles

The Medical College Admissions Test (MCAT) is a critical aspect for aspiring medical students in the United States, demanding months of intensive preparation. While much attention has been given to the academic aspects of MCAT preparation, its toll on students' health and lifestyle has not been fully explored.

138 IMPLEMENTING THE FLORECIENDO SEXUAL AND REPRODUCTIVE HEALTH INTERVENTION FOR LATINA TEENS AND THEIR FEMALE CAREGIVERSV *(Health Disparities / Diversity / Equity / Inclusion / Social Determinants / Ethics)*
Jessica R. Carney, MA, University of Illinois Chicago

Latina teens in the United States face disproportionate adverse sexual and reproductive health outcomes, such as higher rates of unintended pregnancies and sexually transmitted infections, compared to their White counterparts. There is a great need for effective, evidence-based sexual and reproductive health interventions to address these disparities and a particular benefit of incorporating caregivers, who play a key role in reducing adolescents' sexual health risk. Floreciendo is a group-based sexual and reproductive health program for Latina teens (ages 14-18) and their female caregivers (e.g., mothers, aunts) that is currently being delivered through a pilot optimization trial in the Chicagoland area.

139 OBSERVER-RATED FIDELITY OF IMPLEMENTING A SEXUAL AND REPRODUCTIVE HEALTH WORKSHOP FOR LATINA TEENS AND THEIR FEMALE CAREGIVERS IN COMMUNITY SETTINGS *(Health Disparities / Diversity / Equity / Inclusion / Social Determinants / Ethics)*
Wendy Chu, MA, University of Illinois Chicago

Sexual and reproductive health programs are a promising approach for reducing risky sexual behaviors, particularly in Latina teens in the U.S. who face a range of sexual health disparities. Programs that include caregiver involvement have been shown to promote positive outcomes for teens. Further, programs that can be implemented in community settings by community staff can promote reach and sustainability. Adapted from an evidence-based workshop for Black adolescent girls and their mothers, Floreciendo is a newly developed sexual and reproductive health workshop for Latina teens and their female caregivers (e.g., mothers, aunts) designed to reduce teens' risky sexual behavior, incidence of sexually transmitted infections, and unplanned pregnancy. The workshop is currently being delivered at Latine-serving community organizations by community organization staff in a pilot optimization trial. Investigating the fidelity of the Floreciendo workshop implementation—i.e., whether the workshop is delivered as planned—will inform ongoing training and support of facilitators and our assessment of the workshop's preliminary effectiveness.

141 A NATIONWIDE SURVEY ON THE PERCEPTION OF US MEDICAL STUDENTS ON ARTIFICIAL INTELLIGENCE IN MEDICINE. *(Health Disparities / Diversity / Equity / Inclusion / Social Determinants / Ethics)*
Lord Boachie, MA, University of Toledo

With the increasing impact artificial intelligence (AI) has in the field of medicine, physician leaders have called for the integration of AI education in medical training, beginning at the undergraduate medical education level.

142 GEOSPATIAL ANALYSIS OF PREVENTATIVE RESOURCE DISTRIBUTION AND COLORECTAL CANCER OUTCOMES IN MISSISSIPPI (MS): EMPHASIS ON DISPARITIES BETWEEN RURAL AND URBAN POPULATIONS *(Health Disparities / Diversity / Equity / Inclusion / Social Determinants / Ethics)*
Yousaf Zafar, MD, University of Mississippi Medical Center

Introduction: Colorectal cancer (CRC) is a leading cause of death in MS, with the highest mortality rate in the US. Early screening reduces mortality. Faruque et al. (2015) highlighted disparities in CRC across MS, influencing the MS Colorectal Roundtable's (MSCCRT) 2015 plan for a 70% screening rate. Current analysis is crucial for effective resource allocation.

157 HOUSEHOLD FOOD SECURITY AND PERCEPTIONS OF AFFORDABILITY AMONG PREGNANT WOMEN WITH GESTATIONAL DIABETES OR HYPERTENSION IN FLINT, MICHIGAN *(Health Disparities / Diversity / Equity / Inclusion / Social Determinants / Ethics)*
Lanah Almatroud, Michigan State University College of Human Medicine

Gestational Diabetes Mellitus (GDM) and Gestational Hypertension (GHTN) affect 5-10% of U.S. pregnancies and are linked to poor maternal and infant outcomes. Maternal diet, key to managing these conditions, is often worsened by food insecurity, especially in low-income areas like Flint, MI, where access to affordable, nutritious food is limited. In 2022, the successful Pediatric Fruit and Vegetable Prescription Program (FVPP) was expanded to pregnant women to address food accessibility. Participants received up to 14 prescriptions worth $15 each, redeemable for fresh produce at local farmers' or mobile markets. Program exposure has been associated with improved dietary patterns and greater household food security, suggesting its potential as a model for broader nutrition interventions.

143 EVALUATING SARCOID-LIKE REACTIONS IN MELANOMA PATIENTS TREATED WITH PEMBROLIZUMAB: A SYSTEMATIC REVIEW *(Hematology and Oncology / Bone Marrow Transplant)*
Abimbola O. Kolawole, BS, Central Michigan University College of Medicine

Pembrolizumab, a PD-1 checkpoint inhibitor, has transformed the treatment of advanced melanoma and other malignancies. However, the emergence of immune-related adverse events (irAEs), particularly sarcoid-like reactions (SLRs), pose diagnostic challenges by mimicking disease progression and lack comprehensive reporting in melanoma patients treated with pembrolizumab.

144 EFFECT OF SKIN COLOR ON ACCURACY AND CERTAINTY OF CELLULITIS DIAGNOSIS IN THE EMERGENCY DEPARTMENT *(Infectious Disease / Immunization)*
Helena Ikenberry, BerbeeWalsh Department of Emergency Medicine at the University of Wisconsin-Madison School of Medicine and Public Health

Skin and soft tissue infections, the most common of which is cellulitis, account for approximately 4% of all emergency department (ED) encounters. Cellulitis is misdiagnosed in up to 30% of cases, resulting in unnecessary antibiotic prescribing. While previous studies have observed higher rates of diagnostic error for dermatologic conditions in individuals with darker skin, there are no studies investigating this in cellulitis.

145 SLE AND IBD: A RETROSPECTIVE ANALYSIS OF HOSPITALIZATION OUTCOMES *(Rheumatology)*
Rupesh Ramtel, n/a, University of Toledo

Systemic lupus erythematosus (SLE) and inflammatory bowel disease (IBD) are both autoimmune conditions characterized by dysregulated immune responses with possible shared immunological pathways that may predispose individuals to develop features of both diseases. The impact of IBD on SLE are not fully understood, hence we aimed to evaluate whether IBD influences inpatient outcomes, resource utilization, and select complications in patients admitted for SLE using the Nationwide Inpatient Sample (NIS).

T4 Research/Science

Poster # Title/Author

146 IMPACT OF HYPONATREMIA ON OUTCOMES IN PATIENT ADMITTED WITH HEART FAILURE: A NATIONWIDE ANALYSIS *(Cardiology / Cardiovascular Disease)*
Abdallatif Dawoud, MD, Uuniversity of Toledo

Heart failure is a leading cause of hospital admissions, contributing substantially to both morbidity and mortality. Hyponatremia, affecting up to 27% of heart failure patients, is the most common electrolyte imbalance in this population. This study assesses the impact of hyponatremia on in-hospital outcomes in patients admitted with heart failure.

147 THE SAFETY AND EFFICACY OF IMPELLA USE IN ACUTE MYOCARDIAL INFARCTION PATIENTS WITH CARDIOGENIC SHOCK IN THE DIABETIC COHORT; INSIGHTS FORM REAL-WORLD DATA *(Cardiology / Cardiovascular Disease)*
Abdul Wali Khan, University of Missouri Kansas City

Cardiogenic shock (CS) following acute myocardial infarction (MI) is a critical condition that impairs cardiac output and tissue perfusion. The Impella, a mechanical circulatory support (MCS) device, is used to improve clinical outcomes in these patients. Diabetes, a prevalent comorbidity in CS patients, is associated with adverse outcomes, but its specific impact on Impella outcomes in MI-related CS is not well understood. This study aims to evaluate the impact of diabetes on outcomes in this cohort.

148 THE IMPACT OF END-STAGE RENAL DISEASE STATUS ON THE OUTCOMES OF IMPELLA USE IN ACUTE MYOCARDIAL INFARCTION PATIENTS WITH CARDIOGENIC SHOCK; A US PROPENSITY MATCHED RETROSPECTIVE COHORT STUDY *(Cardiology / Cardiovascular Disease)*
Abdul Wali Khan, University of Missouri Kansas City

Cardiogenic shock (CS) following acute myocardial infarction (MI) is a critical condition that impairs cardiac output and tissue perfusion. The Impella, a mechanical circulatory support (MCS) device, is used to improve outcomes in these patients. However, the effect of end-stage renal disease (ESRD), a common comorbidity in CS patients, on Impella outcomes remains unclear.

149 EVALUATING REAL WORLD CLINICAL OUTCOMES IN ATRIAL FIBRILLATION PATIENTS UNDERGOING LEFT ATRIAL APPENDAGE OCCLUSION USING THE WATCHMAN FLX DEVICE: DATA FROM AN URBAN MIDWESTERN NON-ACADEMIC CENTER *(Cardiology / Cardiovascular Disease)*
Ruffin N. Tchakounte, DO, University of Iowa - Des Moines Internal Medicine Program

The Watchman device is a percutaneous implant designed to occlude the LAA, thereby preventing thrombus formation and subsequent embolization.1 Clinical trials have demonstrated the efficacy and safety of the Watchman device, showing it to be non-inferior to warfarin for stroke prevention in selected populations.2,3 As a result, the device has gained acceptance as a standard treatment option, offering a mechanical solution to a complex clinical problem.

150 IS FRAILTY AN INDEPENDENT PREDICTOR OF ADVERSE OUTCOMES IN ACUTE PANCREATITIS? A NATIONWIDE ANALYSIS *(Gastroenterology / Clinical Nutrition)*
Eun Seo Kwak, MD, University of Toledo

Frailty is increasingly recognized as a key determinant of adverse outcomes among hospitalized patients. The Hospital Frailty Risk Score (HFRS) is derived from a list of ICD-10 CM codes which were found to be commonly associated with a subset of individuals with higher hospital use and resource utilization.

151 TRANSLATIONAL INSIGHTS FROM SUN CITY'S OCULAR HEALTH INITIATIVES DURING THE GREAT NORTH AMERICAN ECLIPSE *(Health Disparities / Diversity / Equity / Inclusion / Social Determinants / Ethics)*
Brian J. Kan, BSA, Texas Tech University Health Sciences Center El Paso, Paul L. Foster School of Medicine

Solar eclipses are an astronomical spectacle characterized by the moon blocking the sun from our view. Observation of this event requires special eye protection. Ordinary sunglasses and improvised filters are inadequate eye protection during the partial eclipse phases. Viewing the sun without proper eye protection can cause acute eye conditions such as solar keratitis and/or permanent eye damage like solar retinopathy. Appropriate use of protective eyewear that conforms to ISO 12312-2 specifications, commonly known as "eclipse glasses", prevent eye damage. Nevertheless, disparities in ocular healthcare, including restricted access to optometrists/ophthalmologists and insufficient awareness of eye protection measures, pose substantial obstacles to successful prevention and early detection initiatives.

152 BRIDGING HEALTH EQUITY GAPS: EXPANDING THE STOCK INHALERS FOR SCHOOLS PROGRAM INTO TRIBAL AND RURAL COMMUNITIES IN ARIZONA *(Health Disparities / Diversity / Equity / Inclusion / Social Determinants / Ethics)*
Megan E. Peterson, MPH, RN, University of Arizona Health Sciences

Asthma is a leading chronic disease affecting approximately 8.1% of school-aged children. Tribal and rural communities in Arizona experience a disproportionate burden of asthma-related morbidity, driven by systemic inequities, geographic isolation, and restricted access to healthcare resources. These systemic barriers perpetuate health disparities and limit access to care, further exacerbating asthma-related outcomes in these underserved populations. The Stock Inhaler for Schools (SIFS) Program provides vital undesignated albuterol sulfate access to K-12 institutions, lessening asthma-related emergencies, and absenteeism. During the 2024-25 school year, the University of Arizona expanded the Stock Inhalers for Schools Program to reach rural, medically underserved, and Indigenous populations, addressing critical gaps in asthma care access and management. The expansion integrates culturally tailored asthma education, increased outreach, and resource distribution to address unique community challenges. By involving Indigenous community liaison engagement and utilizing robust evaluation metrics, we highlight early activities of the program's development to improve asthma care and reduce disparities.

153 EXPLORING THE MATERNAL AND CHILD HEALTH CARE SYSTEM IN CUBA: INSIGHTS FROM A FELLOWSHIP EXPERIENCE *(Health Disparities / Diversity / Equity / Inclusion / Social Determinants / Ethics)*
Sharmelle Das, Raleigh Charter High School

Cuba's healthcare system emphasizes preventive care and universal access, achieving maternal and child health outcomes comparable to developed countries despite limited resources. A key component of Cuba's success is the Family Doctor Program, which assigns a doctor to a defined community for personalized, ongoing care. Despite challenges such as the U.S. trade embargo, Cuba maintains low maternal and infant mortality rates through comprehensive, community-based health policies. This research explores the effectiveness of Cuba's maternal and child health system and how its approach might inform health policies in other countries with resource constraints.

154 EMPOWERING FUTURE PHYSICIANS: THE ROLE OF FIRST AID TRAINING IN FIRST-YEAR MEDICAL EDUCATION *(Health Disparities / Diversity / Equity / Inclusion / Social Determinants / Ethics)*
Timothy Chalom, Wayne State University School of Medicine

First Aid First (FAF) provides free and accessible first aid training to members of the Detroit community, including first-year medical students, to empower individuals to respond quickly properly, and confidently during real life emergencies. The average out-of-hospital cardiac arrest (OHCA) survival rate in the United States is 10% but increases to 40% with proper CPR [1]. Individuals with Hands-Only CPR training have faster response times and better OHCA survival rates [2]. Hands-Only CPR is equally effective as Basic Life Support (BLS) CPR within the first few minutes of cardiac arrest [3]. Stop the Bleed training prevents death associated with major hemorrhagic bleeding [4].

155 MAPPING DISPARITIES IN CERVICAL CANCER SCREENING ACROSS THE U.S. *(Health Disparities / Diversity / Equity / Inclusion / Social Determinants / Ethics)*
Tylar Dickson, MA, BS, Michigan State University College of Human Medicine

Health disparities have long been analyzed through the lens of regional and urban-rural differences. Revisions to cervical cancer screening (CCS) guidelines have redefined how healthcare providers interpret and apply HPV and Pap tests. This study hypothesizes that geographic factors also significantly influence screening practices. Its objective is to explore the impact of regional and urban-rural designations on the administration of cervical cancer screening.

156 LONG-TERM EFFECTS OF SYMPTOMATIC MACROMASTIA AND NAVIGATING INSURANCE COVERAGE *(Health Disparities / Diversity / Equity / Inclusion / Social Determinants / Ethics)*
Zeinab Mhanna, BS, Michigan State University College of Human Medicine

Macromastia, or breast hypertrophy, is a condition in which a person possesses excess breast tissue. This condition can result in a wide range of physical, psychological, and social issues, including back pain, shoulder pain, neck pain, headaches, limited range of motion, psychological influences, and decreased quality of life. People with macromastia often report increased rates of depression, anxiety, social withdrawal, bullying, and low self-esteem. In addition to the adult population suffering from symptomatic macromastia, many adolescents suffer from symptomatic macromastia, as well, especially during puberty, a time when mental health challenges such as depression and anxiety are already heightened. This review examines how macromastia affects quality of life in several aspects, especially regarding long-term outcomes. It also addresses barriers to care, such as insurance coverage challenges and access disparities, with the goal of guiding healthcare providers toward more comprehensive and equitable care.

158 EVALUATING THE IMPACT OF SARCOPENIA ON OVERALL SURVIVAL IN PATIENTS WITH ADVANCED NON-SMALL CELL LUNG CANCER *(Hematology and Oncology / Bone Marrow Transplant)*
Gloria Pan, BS, Carle Illinois College of Medicine

Sarcopenia is defined as the progressive and extensive skeletal muscle loss accompanied by functional decline. The presence of sarcopenia predicts lower tolerance to cancer therapies and can lead to a greater risk of infection, chemotherapy toxicity, and perioperative problems. While it has been established that overall survival of sarcopenic patients decreases when compared to their non-sarcopenic counterparts, few studies have compared patient outcomes between treatment modalities (chemotherapy versus immunotherapy/targeted therapy) and ethnic groups (Asian versus non-Asian).

159 RISK ASSESSMENT TOOL DEVELOPMENT FOR SUPPORTING SCHOOL HEALTH: LESSONS LEARNED THROUGH SCHOOL HEALTH PERSONNEL ENGAGEMENT *(Infectious Disease / Immunization)*
Amanda M. Wilson, PhD, University of Arizona

The COVID-19 pandemic highlighted the already strained school health system in the U.S. and its limited capacity to respond to infectious disease outbreaks or pandemics. Our preliminary research with school health staff in Pima County, Arizona[1–3] demonstrated a major need for fast and inexpensive decision-making support for school health regarding interventions for reducing disease spread. We utilized quantitative microbial risk assessment (QMRA)[4] to develop a decision support tool that estimates how single or combined interventions reduce infection risks for students across several respiratory viral pathogens of interest: influenza A virus, respiratory syncytial virus (RSV), rhinovirus, and SARS-CoV-2.

160 A NATIONALWIDE STUDY ON OUTCOME OF CIRRHOSIS AMONG PATIENTS WITH SYSTEMIC LUPUS ERYTHEMATOUS. *(Rheumatology)*
Kishan Shrestha, University of Toledo Medical center

Background: Systemic lupus erythematosus (SLE) is an autoimmune condition with a variety of clinical presentations that can affect multiple organs including the gastrointestinal system. The concomitant effects of SLE and cirrhosis are not well understood. The aim of our study is to investigate whether SLE influences inpatient outcomes, resource utilization, and complications in patients hospitalized for cirrhosis using the Nationwide Inpatient Sample (NIS).

161 EVALUATING THE IMPACT OF FRAILTY ON SYSTEMIC SCLEROSIS OUTCOMES: A RETROSPECTIVE STUDY *(Rheumatology)*
Mitchell T. Salke, MD, University of Toledo

Frailty has emerged as an important factor influencing poor outcomes in hospitalized patients. The Hospital Frailty Risk Score (HFRS) stems from a list of ICD-10 CM codes which were found to be commonly associated in individuals with higher hospital use and resource utilization.

Translational Science Oral Sessions I, II, and III
Tuesday, April 15, 2025
3:30 pm – 4:45 pm

OUTSTANDING YOUNG INVESTIGATOR

PDK4-MEDIATED FORMATION OF THE CA2+-CHANNELING COMPLEX AT THE ER-MITOCHONDRIA INTERFACE CONTRIBUTES TO THE DEVELOPMENT OF ALCOHOL-ASSOCIATED LIVER DISEASE *(Gastroenterology / Clinical Nutrition)*
Themis Thoudam, PhD, Indiana University

Alcohol-associated liver disease (ALD) poses a significant public health challenge, with increasing incidence rates. Its pathogenesis involves multifaceted mechanisms, including mitochondrial (MT) dysfunction, particularly calcium (Ca2+) overload-induced MT dysfunction. A crucial contributing factor to MT Ca2+ overload is the formation of mitochondria-associated endoplasmic reticulum (ER) membrane (MAM), a specialized ER region interacting closely with MT. At MAM sites, facilitated transfer of Ca2+ from the ER to MT occurs through the MAM Ca2+-channeling complex (MCCC), comprising proteins such as IP3R1 (an ER protein), VDAC1 (a MT protein), and GRP75 (an anchoring protein connecting IP3R1 and VDAC1). However, the precise initiating factors driving MT Ca2+ accumulation in ALD remain unclear.

TRANSLATIONAL SCIENCE ORAL SESSION I: PULMONARY, CRITICAL CARE, CARDIOLOGY, AND RENAL

ADDITION OF PATHOLOGIC FLOW TO HEMIN-TREATED PULMONARY ARTERY ENDOTHELIAL CELLS IMPLICATES DISTINCT TRANSCRIPTOMIC PATTERNS IN SICKLE CELL DISEASE ASSOCIATED PULMONARY HYPERTENSION *(Pulmonary / Critical Care)*
Kelsey Holbert, MD, University of Illinois-Chicago

Although the pulmonary vasculature is exposed to constant flow, most in-vitro work studying the mechanisms of pulmonary hypertension (PH) is performed under static conditions. The effects of pathologic flow have been studied in other vascular conditions such as systemic hypertension and atherosclerosis, but less so in diseases that affect the pulmonary vasculature. Flow may be particularly important in mechanisms of sickle cell disease (SCD) associated PH, where anemia and other physiologic stressors cause high cardiac output exposing the pulmonary vasculature to pathologic flow. Our previous work has implicated intravascular hemolysis and hemin release in the development of SCD-PH through pulmonary artery endothelial cell (PAEC) phenotypic transition and dysfunction. We hypothesize that PAEC exposed to flow, in addition to hemin, will demonstrate novel transcriptomic patterns that identify unique, clinically relevant processes related to the development of SCD-PH.

MITOCHONDRIAL METABOLIC REGULATOR PYRUVATE DEHYDROGENASE KINASE 4 (PDK4) MEDIATES SEX-SPECIFIC CARDIAC RESPONSE TO ENDOTOXEMIA *(Cardiology / Cardiovascular Disease)*
John Q. Yap, PhD, Loyola University Chicago

Sepsis is a life-threatening condition that occurs when the immune system is unable to properly respond to infection. Patients with sepsis often experience cardiomyopathy, which is characterized by cardiac inflammation, ventricle dilation and decreased cardiac function. Interestingly, females tend to have better cardiac outcomes during sepsis compared to males. In this study, we show that differential cardiac expression of pyruvate dehydrogenase kinase 4 (PDK4) in males and females contributes to sex-specific cardiac outcomes during sepsis. PDK4 is a mitochondrial protein that decreases glucose metabolism by inhibiting pyruvate dehydrogenase (PDH) and plays a critical role in energy production and substrate utilization in the heart.

SPATIAL TRANSCRIPTOMICS INSIGHTS ACROSS A SPECTRUM OF AIRWAY DISEASES *(Pulmonary / Critical Care)*
Ghandi F. Hassan, MD, Washington University in St Louis

In recent years, advanced multi-omics techniques have been used to profile genetic, transcriptional, and proteomic features in pulmonary disease. However, the lack of spatial resolution has limited our ability to distinguish variations in the airway niche that may provide new insights into pathogenesis. Spatial transcriptomic analysis platforms are powerful tools to bridge this gap, enabling the mapping of gene expression and cellular interaction networks with high spatial fidelity. These approaches have yet to be employed in a cross-sectional analysis of human airway disease.

THE IMMUNE LANDSCAPE OF INTRATHORACIC LYMPH NODES IS ASSOCIATED WITH THE LYMPHOPENIC IMMUNOTYPE IN SARCOIDOSIS *(Pulmonary / Critical Care)*

Christian Ascoli, MD, Department of Medicine; Division of Pulmonary, Critical Care, Sleep, and Allergy at the University of Illinois at Chicago

The presence of paradoxical peripheral lymphopenia defines a unique but poorly understood sarcoidosis immunotype associated with greater inflammatory activity and more severe organ involvement. Conventionally, lymphopenia is thought to result from increased numbers and heightened antiproliferative effects of CD4+ T regulatory cells on effector T-cells. However, it is recognized that the differentiation of naïve T-cells into different effector T-cell subsets depends on interactions with professional antigen-presenting cells (namely dendritic cells [DCs]) within the lymph nodes (LNs). Moreover, we and others have previously implicated aberrant innate-adaptive immune cell crosstalk as a determinant of lymphopenia in sarcoidosis, and recently, HLA-DRB1 alleles have been associated with lymphopenia. Thus, we hypothesize that interactions between DCs and lymphocytes within intrathoracic LNs determine distinct transcriptional programming that governs lymphocyte function and fate in sarcoidosis.

THE EFFECT OF NICOTINE DELIVERY SYSTEM ON EXTRACELLULAR MATRIX BLOOD PROTEASE LEVELS: A RANDOMIZED CROSSOVER DESIGN *(Pulmonary / Critical Care)*

Ava Wilson, PhD, MSPH, Kansas University Medical Center

Recently, E-cigarettes and heated tobacco products (HTPs) have been marketed as combustible cigarette alternatives due to their perceived potential for reduced tobacco-related toxicant exposure and negative health effects. However, little is known about the long-term comparative effects of e-cigarettes and HTPs versus traditional cigarettes on aberrant extracellular matrix (ECM) protein degradation. In the lung, changes in proteolysis can alter inflammation, cell signaling, and mucus clearance, among other processes, as part of normal lung homeostasis. Combustible cigarette use is associated with prolonged increases in protease levels linked to increased disease pathogenesis and degradation of the lung's connective tissue, leading to emphysema. Although there is an established association between combustible cigarette use and abnormal protease production, gaps remain in our knowledge of how alternative product use affects protease production.

DISPARITIES IN TIMING AND DEMOGRAPHICS OF WITHDRAWAL OF LIFE-SUSTAINING THERAPY FOLLOWING IN-HOSPITAL AND OUT-OF-HOSPITAL CARDIAC ARRESTS *(Pulmonary / Critical Care)*

Shelbi Erp, MD, University of Illinois Chicago

Post-cardiac arrest patients often undergo withdrawal of life-sustaining therapy (WLST) due to poor perceived neurologic prognosis. Despite guidelines recommending neuroprognostication and WLST decisions at least 72 hours post-arrest, early WLST remains common, potentially leading to excessive deaths. Disparities in WLST rates and timing across demographic groups may contribute to inequities in post-cardiac arrest outcomes. These disparities and their driving factors are poorly understood, particularly between in-hospital (IHCA) and out-of-hospital cardiac arrest (OHCA) populations.

TRANSLATIONAL SCIENCE ORAL SESSION II: ENDOCRINE/METABOLISM, GASTROENTEROLOGY _____

ROLE OF PHOSPHATIDYLETHANOLAMINE METHYLTRANSFERASE (PEMT) IN METABOLIC DYSFUNCTION-ASSOCIATED STEATOHEPATITIS (MASH) *(Endocrinology / Metabolism)*

Sara Osorio-Valencia, University of Illiois at Chicago

Metabolic Dysfunction-Associated Steatotic Liver Disease (MASLD) is the leading cause of chronic liver disease, affecting over 30% of the population in Western countries and up to 80% of patients with type 2 diabetes (T2D). T2D significantly increases the risk of MASLD progression to Metabolic Dysfunction-Associated Steatohepatitis (MASH), characterized by inflammation, fibrosis, and hepatocellular ballooning. Current treatments are limited to lifestyle modifications, highlighting the need to elucidate the molecular mechanisms driving MASLD/MASH progression to develop effective therapies. A hallmark of MASH is hepatic fat accumulation (steatosis), arising from an imbalance in fatty acid (FA) synthesis, storage, and utilization. FA are also incorporated into phospholipids, primarily phosphatidylcholine (PC) and phosphatidylethanolamine (PE), which are crucial for membrane integrity, and very low-density lipoprotein (VLDL) assembly and secretion. Notably, a reduced PC-to-PE ratio is consistently observed in humans and mice with MASH. This ratio is partially regulated by phosphatidylethanolamine methyltransferase (PEMT), which catalyzes the conversion of PE to PC using S-adenosylmethionine (SAM) as a methyl donor. We have previously described that hepatic PEMT expression is reduced in mice with diet-induced MASH (Lee et al., Cell. Mol. Gastroenterol. Hepatol, 2021). Furthermore, loss-of-function variants in the PEMT gene are associated with more severe MASLD and MASH in humans (Song et al., FASEB J 2005, Piras et al., Int. J. Mol. Sci, 2022)

KNOCKDOWN FAS ASSOCIATED FACTOR FAMILY MEMBER 2 PREVENTS ALCOHOL-ASSOCIATED LIVER DISEASE *(Gastroenterology / Clinical Nutrition)*
Zhihong Yang, Indiana Univeristy

Alcohol-associated liver disease (ALD) is a complex liver disorder resulting from excessive alcohol consumption. Fas-associated factor family member 2 (FAF2, also known as UBXD8/ETEA) is a ubiquitin ligase adaptor protein involved in endoplasmic reticulum-associated degradation (ERAD) and lipid droplet degradation.

MICROPUNCTURE-EXOSOMES DISPLAY AN ENHANCED IMMUNOANGIOGENIC PAYLOAD *(Surgery)*
Jazzmyn Dawes, BS, Penn State College of Medicine

Ischemia is a major cause of morbidity worldwide. The few therapeutics developed to induce angiogenesis have not found clinical translation. Exosomes, a class of small extracellular vesicles, are an emerging acellular treatment option for ischemic diseases. We recently developed an in vivo microsurgical approach, micropuncture (MP), that induces angiogenesis via targeted vascular injury possibly mediated through inflammatory paracrine mechanisms. Our in vitro pilot studies demonstrate that MP enhances exosome (Exo) cargo. We hypothesize that MP-Exo stimulates angiogenesis via enhanced immunoangiogenic payload delivery.

APOL1 KIDNEY DISEASE VARIANTS ALTER FAT DEPOSITION IN A SEX-SPECIFIC MANNER *(Endocrinology / Metabolism)*
Andrew O. Kearney, BA, Northwestern University

Obesity-which develops from environmental and biological factors-is disproportionately more prevalent among individuals of African ancestry. Part of this difference in obesity prevalence may be due to DNA variants specific to African ancestry. Recent observational studies have reported an association between obesity and the APOL1 G1 and G2 DNA variants, common among and specific to individuals of sub-Saharan African ancestry. Compared to the G0 major allele, the G1 and G2 risk variants (RV) are known to increase the risk of kidney disease in African-ancestry patients and have been extensively studied in the renal context.

MOTIVATING CHANGE IN OLDER ADULTS: A PILOT STUDY OF MOTIVATIONAL MESSAGES TO PROMOTE QUITTING SMOKING *(Geriatrics and Aging)*
Adrienne L. Johnson, PhD, University of Wisconsin School of Medicine and Public Health

In the U.S., 9.7 million adults ages 60 and older smoke cigarettes and are at elevated risk for the greatest age-related fear of older adults: dementia (1-3). Compared to younger adults, older adults who smoke are half as likely to make a quit attempt, but more likely maintain abstinence using evidence-based treatments – motivational messages are necessary for this population (4-6). Previous research among older adults showed a targeted, fear-based message highlighting the risks of dementia from continued smoking significantly increased immediate motivation to quit compared to a control message (7,8).

MENTAL HEALTH SCREENINGS IN THE ED: CHRONIC TRAITS OR TEMPORARY STATES? *(Diagnosis or Treatment of a Disease Process or Clinical Syndromes)*
Mohammed I. Lone, UChicago Medicine

Emergency department (ED) patients demonstrate substantially higher rates of depression compared to both primary care settings and the general population. While the ED serves as a safety net for mental healthcare delivery, the clinical significance of these elevated rates remains uncertain, as mood symptoms may represent either chronic psychiatric conditions or acute stress.

TRANSLATIONAL SCIENCE ORAL SESSION III: HEMATOLOGY/ONCOLOGY, RHEUMATOLOGY/IMMUNOLOGY AND NEUROLOGY

CYTOTOXIC AND PRO-INFLAMMATORY EFFECTS OF MICROPLASTICS AND MICROCYSTIN TOXIN ON HUMAN AIRWAY EPITHELIAL CELLS *(Environmental Factors Affecting Health)*
Upasana Shrestha, BS, The University of Toledo

Harmful algal blooms (HABS) release potent cyanotoxins into water bodies, posing serious threats to human and animal health due to their toxic effects on vital organs, including liver, kidneys, and lungs. Lake Erie HABs are dominated by microcystin (MC) -producing cyanobacteria, with microcystin-leucine arginine (MC-LR) being one of the most prevalent and toxic variants. In addition to health risks posed by MC, there is a growing concern about nano- and microplastic (NP and MP) in and around water bodies. Humans can be exposed to MCs and MPs through ingestion, skin contact, and inhalation. While most research have focused on oral exposure, emerging

evidence highlights dangers of inhaling MCs and MPs, both of which can cause lung injury. Furthermore, aerosols contaminated with these contaminants can travel over 30 km from affected areas, potentially exposing large population to inhalation risks. Using a fully differentiated 3D human airway epithelial model, we have previously shown that short-term exposure to NP-containing aerosols induced differential secretion of cytokine and chemokine proteins with significant reductions in levels of IL-21, IL-15, IL-2, CXCL10, and TGFβ. This combined reduction in these cytokines could result in a dampened immune response, potentially affecting the long-term ability of the airway epithelium to cope with environmental stressors like HAB aerosol exposure.

NORTRIPTYLINE: A REPURPOSABLE ADJUVANT TO CHEMOTHERAPY IN GROUP 3 MEDULLOBLASTOMA THAT TRIGGERS APOPTOSIS BY INDUCING MITOCHONDRIAL DYSFUNCTION *(Hematology and Oncology / Bone Marrow Transplant)*
David Doss, Creighton University School of Medicine

Medulloblastoma (MB) is the most common malignant pediatric brain tumor, with Group 3 (G3MB) representing 25% of cases and demonstrating the most aggressive clinical course. G3MB is characterized by poor 5-year survival rates (< 50%), high recurrence, and limited efficacy of current multimodal treatments, which include surgery, craniospinal irradiation, and chemotherapy. While subgroup-specific therapies have shown promise in other MB subtypes, the therapeutic landscape for G3MB remains sparse, necessitating novel approaches to improve outcomes.

TARGETING THE ABCB7/GPX4 AXIS USING ARTESUNATE POTENTIATES CISPLATIN RESPONSE IN PEDIATRIC GROUP 3 MEDULLOBLASTOMAS BY TRIGGERING FERROPTOSIS *(Neurology)*
Ranjana K. Kanchan, PhD, UNIVERSITY OF NEBRASKA MEDICAL CENTER

Medulloblastomas are the leading cause of cancer-related mortality in childhood. Group 3 medulloblastomas (G3MB) are the most aggressive MB tumors, with 5-year survival < 50%. A poor understanding of mechanisms driving aggressiveness contribute to a lack of novel therapies for this subgroup. We have isolated ferroptosis evasion as a powerful mechanism that drives aggressiveness in G3MBs. Ferroptosis is a form of cell death triggered by iron overload. Inhibiting the deregulated iron transporter ABCB7 in G3MBs triggers ferroptosis in vitro. It dually inhibits the principal regulator of ferroptosis, GPX4. Artesunate is an FDA-approved, antimalarial drug, whose mechanism of cytotoxicity in Plasmodium is through inducing iron overload.

SOCIOECONOMIC AND DEMOGRAPHIC DISPARITIES IN TREATMENT AND SURVIVAL OF OVARIAN SEROMUCINOUS CARCINOMA: A NATIONAL CANCER DATABASE STUDY *(Hematology and Oncology / Bone Marrow Transplant)*
Nikhil Furtado, BS, Creighton University School of Medicine

Ovarian seromucinous carcinoma (OSMC) is a rare and controversial epithelial ovarian malignancy, initially designated as a distinct histologic entity in the 2014 World Health Organization classification but redefined in 2020 as a variant of endometrioid carcinoma with mucinous differentiation due to overlapping morphological and molecular characteristics. OSMC is characterized by a complex papillary architecture, biphasic serous and mucinous epithelial differentiation, and a strong association with endometriosis. Despite reclassification, OSMC demonstrates a unique oncologic trajectory, with survival outcomes more closely resembling mucinous carcinoma than endometrioid carcinoma.

ENHANCING IMMUNOTHERAPY EFFICACY IN MYELOMA WITH A DUAL-ACTION MITOCHONDRIAL-TOXIC PEPTIDE THAT ACTIVATES T CELLS AND INDUCES TUMOR CELL DEATH *(Hematology and Oncology / Bone Marrow Transplant)*
Smriti Gurung, PhD, INDIANA UNIVERSITY

Immunotherapy that redirects T cells to tumor-specific antigens shows promise in myeloma, but resistance is universal, caused by both tumor and T cell factors. Tumors upregulate Programmed Death Ligand -1 (PD-L1), which promotes tumor growth and binds to Programmed Death Receptor-1 (PD-1) on T cells, suppressing their function and enabling immune escape. The bone marrow microenvironment exacerbates this resistance by promoting tumor survival and further impairing T cell function. We previously developed PP-k, a novel PD-L1-blocking peptide conjugated with a mitochondrial-targeted peptide (KLAKLAK)2. PP-k binds PD-L1 on tumor cells, blocking PD-L1/PD-1 signaling between tumors and T cells while disrupting mitochondria, leading to direct tumor cell killing.