14th Annual Binghamton Biomedical Research Conference

Wednesday, April 20, 2022 | 6 p.m. – 8 p.m.

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VIRTUAL POSTER SESSIONS

SESSION 1: 6:00 P.M. – 6:30 P.M.

BREAKOUT ROOM 1 | **ANALYSIS OF MENTAL DISTRESS AND FOOD INTAKE ATTRIBUTES USING EDA TECHNIQUES**
Presenter(s): Kanishk Barhanpurkar; Lina Begdache; Saloumeh Sadeghzadeh

BREAKOUT ROOM 2 | **CELLULAR LOCALIZATION OF DBP2 AND IDENTIFICATION OF ITS INTERACTION PARTNERS**
Presenter(s): Rebekah Lubinga

BREAKOUT ROOM 3 | **TRACKING LIPID DROPLET ACCUMULATION IN PDAC CELLS**
Presenter(s): Olivia Cartwright

BREAKOUT ROOM 4 | **DEVELOPING AN EFFECTIVE SHIN SPLINT PREVENTION PROGRAM: A PILOT STUDY**
Presenter(s): Utsav Hanspal MD, MPH, CAQSM

BREAKOUT ROOM 5 | **23-YEAR-OLD FEMALE WITH METASTATIC GASTRIC ADENOCARCINOMA**
Presenter(s): Khandokar Talib, MD

BREAKOUT ROOM 6 | **RAPID PROGRESSIVE GLOMERULONEPHRITIS AND DIFFUSE ALVEOLAR HEMORRAGE REVEALING A CASE OF LATE ONSET SYSTEMIC LUPUS ERYTHEMATOSUS**
Presenter(s): Towfiqul Chowdhury, MD.

BREAKOUT ROOM 7 | **THROMBOTIC THROMBOCYTOPENIC PURPURA: A RARE CAUSE OF SEVERE ACUTE KIDNEY INJURY**
Presenter(s): Hatem Najar, MD

BREAKOUT ROOM 8 | **A SHOCKING CASE OF PLATELET DISAPPEARANCE!**
Presenter(s): Altif Muneeb, MD, Pranava Ganesh, MD, Wajeeh ur Rehman, MD, Hisham Kashou, MD

BREAKOUT ROOM 9 | **SEVERE LUMBAR DISC HERNIATION COMPRESSING NERVES OF THE CAUDA EQUINA IN A DIVISION 1 ATHLETE: A CASE REPORT**
Presenter(s): Dr Ryan Thachen-Cary, MD MSc

BREAKOUT ROOM 10 | **THE LADY WINDERMERE SYNDROME: A CLASSIC CLINICAL AND RADIOLOGIC PRESENTATION**
Presenter(s): Farid Khan, MD

BREAKOUT ROOM 11 | **Onyx Embolization of a multiloculate skull-based vascular tumor which feed only by the branch of the ophthalmic artery presented with mass effect and mid-line shift.**
Presenter(s): Casey Manzanero

BREAKOUT ROOM 12 | **Assessing the Role of Non-Neutralizing Antibodies in Antibody-Dependent Cellular Phagocytosis of Dengue Virus Infected Cells**
Presenter(s): Mitchell Waldran

BREAKOUT ROOM 13 | **AEROSOL NCMT-3 ATTENUATES SEPSIS-INDUCED ACUTE KIDNEY INJURY (AKI) BY ATTENUATING RENAL MMP-9 ACTIVATION AND APOPTOSIS**
Presenter(s): Julia Ma

BREAKOUT ROOM 14 | **INTRAPROCEDURAL LEFT VENTRICULAR RUPTURE DURING VENTRICULOGRAPHY , A CASE REPORT AND LITERATURE REVIEW**
Presenter(s): Mohamed Salahie, MD

SESSION 2: 6:30 P.M. – 7:00 P.M.

BREAKOUT ROOM 1 | **INFLAMMATION AND LONGEVITY IN POST-WWII GUAMANIAN AMYOTROPHIC LATERAL SCLEROSIS (ALS)**
Presenter(s): Risana N Chowdhury, Suhaib A Azam, Elidenya N Pena, Ralph M Garruto, Katherine Wander

BREAKOUT ROOM 2 | **EFFECT OF MODERNIZATION ON SERUM C-REACTIVE PROTEIN IN HEALTHY CHAMORU MALES AND FEMALES LIVING IN POST-WWII GUAM**
Presenter(s): Suhaib Azam

BREAKOUT ROOM 3 | **TRACKING THE EVOLUTION OF THE SARS-CoV-2 SPIKE GLYCOPROTEIN IN VARIANTS OF CONCERN**
Presenter(s): Eda Akcal, Alyssa Cottrell, Mitchell Rheeman, Jamie Vong, Charles Salow, Alexa Vargas

BREAKOUT ROOM 4 | **A CASE REPORT OF METFORMIN ASSOCIATED LACTIC ACIDOSIS IN A YOUNG INDIVIDUAL WITHOUT SIGNIFICANT COMORBIDITIES**
Presenter(s): Hatem Najar, MD

BREAKOUT ROOM 5 | **TREATMENT OF A MOREL-LAVALLÉE LESION OF THE LEG WITH DEBRIDEMENT AND DOXYCYCLINE SCLERODESIS: A CASE REPORT**
Presenter(s): Dr Ryan Thachen-Cary, MD MSc

BREAKOUT ROOM 6 | **ALCOHOL-INDUCED CARDIOMYOPATHY PRESENTING WITH LEFT VENTRICULAR APICAL THROMBUS: Case Report**
Presenter(s): Farid Khan, MD

BREAKOUT ROOM 7 | **TITLE: A VERY RARE CASE OF BRASH SYNDROME**
Presenter(s): Khandokar Talib, MD

BREAKOUT ROOM 8 | **ABSTRACT: RETROSPECTIVE AND PROSPECTIVE STUDY OF THE EFFECTS OF CONTROLLED AND UNCONTROLLED COMORBIDITIES ON THE CLINICAL COURSE AND PROGNOSIS OF COVID-19 PATIENTS**
Presenter(s): Dan Chin, MD

BREAKOUT ROOM 9 | **ATYPICAL PRESENTATION OF ANAPLASMOSIS**
Presenter(s): Minhaz Ahmad, MD, Godson Senyondo, MD, Mark Shumeyko, MD

BREAKOUT ROOM 10 | **A RARE CASE OF CONCOMITANT HERPES SIMPLEX ESOPHAGITIS AND ESOPHAGEAL CANDIDIASIS**
Presenter(s): Gowthami Ramar MD, Ibrar Atiq MD, Ali Khan MD, Amanke Oranu MD

BREAKOUT ROOM 11 | **REFOLDING P53 WITH ZINC: INVESTIGATION INTO THE ROS PRODUCTION OF 100 NOVEL ZINC AND COPPER IONOPHORES *Joseph P. Settineri and Stewart N. Loh; Department of Biochemistry and Molecular Biology**
Presenter(s): Joseph P. Settineri

BREAKOUT ROOM 12 | **A COMPLEX CASE OF SYMPTOMATIC RIGHT INTERNAL CAROTID ARTERY DISSECTING PSEUDOANEURYSM WITH STENOSIS UNDERWENT ENDOVASCULAR REPAIR USING FLOW DIVERTERS-A TECHNICAL REPORT**
Presenter(s): Professor Lodi, MD, FAHA, FANA, FAAN

BREAKOUT ROOM 13 | **MIDDLE MENINGEAL ARTERY EMBOLIZATION FOR CHRONIC SUBDURAL HEMATOMA**
Presenter(s): Justin Lui, Ryan Thibodeau MD, Abtin Jafroodifar MD, Mohammed Jawed MD

BREAKOUT ROOM 14 | **SQUAMOUS CELL CARCINOMA LEADS TO AMPUTATION OF GREAT TOE: A CASE STUDY**
Presenter(s): P. Genise Kennedy, DPM

BREAKOUT ROOM 15 | **TIBIO-TALO-CALCANEAL ARTHRODESIS WITH RETROGRADE INTRAMEDULLARY NAIL WITH TITANIUM TOTAL KNEE ARTHROPLASTY REVISION CONE FOLLOWING INFECTED NONUNION OF TIBIAL INTRAMEDULLARY NAIL**
Presenter(s): Rahim Lakhani, DPM

SESSION 3: 7:00 P.M. – 7:30 P.M.

BREAKOUT ROOM 1 | **BEHAVIORAL AND ENVIRONMENTAL RESIDENTIAL RISK FACTORS FOR LYME DISEASE IN THE SOUTHERN TIER OF NEW YORK**
*Presenter(s): *Diana Weiss, *Danielle Carucci, *Margaret Duris, *Megan Gauck, *Katherine Lacy, *Anna Lynch, Gabrielle Pysnik, Ralph M Garruto.*

BREAKOUT ROOM 2 | **ENVIRONMENTAL AND BEHAVIORAL RISK FACTORS FOR LYME DISEASE IN THE BINGHAMTON UNIVERSITY NATURE PRESERVE**
*Presenter(s): *Nicholas Strickland, *Youyu Zhang, *Ruthann Flick, *Anna Lynch, Cambria Weeden, Amanda Roome, Ralph M Garruto.*

BREAKOUT ROOM 3 | **THE ASSOCIATION BETWEEN DIET, EXERCISE, AND NEUROBEHAVIORS**
*Presenter(s): *Patrissy C, *Williams S, Lee S, Quazi N, Stala O, Vidrin A, Marinaccio D, Qureshi M, and Begdache L*

BREAKOUT ROOM 4 | **CORRELATION OF FRUCTOSAMINE WITH CONTINUOUS GLUCOSE MONITOR IN PATIENTS WITH DIABETES**
Presenter(s): Gurdeep Singh, MD, Anne Sill, PhD, Pablo Caignet, DO, Andreas Feia, DO, and Timothy Howland, MD

BREAKOUT ROOM 5 | **STANDARDIZED RESIDENT SIGNOUT METHOD: A SINGLE-CENTER EXPERIENCE**
Presenter(s): Hatem Najar, MD

BREAKOUT ROOM 6 | **HEART FAILURE PRESENTING AS PHANTOM TUMOR OF THE LUNG**
Presenter(s): Farid Khan, MD

BREAKOUT ROOM 7 | **WAS THE MALIGNANCY HIDING?**
Presenter(s): Gowthami Ramar MD, Ali Khan MD, Nazif Chowdhury MD

BREAKOUT ROOM 8 | **PANCREATIC HEPATOID CARCINOMA: A VERY RARE AND INTRIGUING ENTITY**
Presenter(s): Yasir Ahmed

BREAKOUT ROOM 9 | **VEGETATION NEGATIVE CARDIOBACTERIUM HOMINIS ENDOCARDITIS?**
Presenter(s): Mohammed Faraaz Rahman M.D.; Farid Khan M.D.; Siya Bhagat

BREAKOUT ROOM 10 | **GASTRIC VOLVULUS IN THE SETTING OF PARAESOPHAGEAL HERNIA: EARLY RECOGNITION OF SEVERITY AND TIMELY MANAGEMENT CAN PREVENT FATAL COMPLICATIONS**
Presenter(s): Usama Sakhawat, MD

BREAKOUT ROOM 11 | **INAPPROPIATE ICD SHOCKS IN A PATIENT WITH SUBCUTANEOUS IMPLANATBLE CARDIOVERTER DEFRILLATOR DUE TO MIGRATED LEAD FROM WEIGHT LOSS**
Presenter(s): Wajeeh ur Rehman MD, Altif Muneeb MD, Raheel Chaudhry MD, Vincent Skovira MD, Afzal ur Rehman MD

BREAKOUT ROOM 12 | **GAZE WEAKNESS NEGLECT AND SPEECH (GWNS): AN ACUTE ISCHEMIC STROKE SCALE OF LARGE VESSEL OCCLUSION (LVO) IN THE EMERGENCY DEPARTMENT FOR FASTER TREATMENT.**
Presenter(s): Professor Lodi, MD, FAHA, FANA, FAAN

BREAKOUT ROOM 13 | **EMBOLIZATION OF BRONCHIAL ARTERY ANEURYSMS: A PRIMER FOR RESIDENTS**
Presenter(s): Ethan Fung BS, Ryan Thibodeau MD, Abtin Jafroodifar MD, David Pinter MD, Tomas Appleton-figueira MD

BREAKOUT ROOM 14 | **A CASE OF HYPOGLOSSAL NERVE PALSY FOLLOWING ACDF IN A PATIENT WITH KLIPPEL-FEIL DEFORMITY**
Presenter(s): John Panzone BS, Richard Tallarico MD, William Lavelle MD

BREAKOUT ROOM 15 | **HOME BASED TELE-EXERCISE STUDY FOR PEOPLE WITH CHRONIC NEUROLOGICAL IMPAIRMENTS**
Presenter(s): Rachel Garn

SESSION 4: 7:30 P.M. – 8 P.M.

BREAKOUT ROOM 1 | **EFFECTS OF MEDITERRANEAN AND WESTERN DIETARY PATTERNS ON MENTAL DISTRESS AND PERCEIVED STRESS**
Presenter(s): Katerina Nagorny, Ushima Chowdhury, Lexis Rosenberg, Megan Welch, Gerard Dempsey, Michael Colabelli, Tharsana Kumarasivam, Lindsey Moser, & Lina Begdache

BREAKOUT ROOM 2 | **EFFECTS OF CAFFEINE, EXERCISE, AND BREAKFAST ON MENTAL DISTRESS AND PERCEIVED STRESS**
Presenter(s): Holly McNair and Sabrina Bubis

BREAKOUT ROOM 3 | **INVESTIGATING REPORTED ASSOCIATIONS BETWEEN HUMAN MITOCHONDRIAL DISEASES AND MTDNA HAPLOGROUPS**
Presenter(s): Kayla Opalecky, Kameron Cummings, Samantha Narcissi, Emily Brazee, Katie Sizing

BREAKOUT ROOM 4 | **A RARE CASE OF DUODENAL LEIOMYOMA**
Presenter(s): Gowthami Ramar MD, Minhaz Ahmad MD, Nazif Chowdhury MD

BREAKOUT ROOM 5 | **HETROPHILE ANTIBODY CONFOUNDING NSTEMI?**
Presenter(s): Mohammed Faraaz Rahman M.D; Farid Khan M.D.; Siya Bhagat

BREAKOUT ROOM 6 | **PACEMAKER INSERTION AVERTED BY HEMODIALYSIS!**
Presenter(s): Altif Muneeb, MD, Amit Bansal, MD, Owais Ahmed, MD

BREAKOUT ROOM 7 | **A UNIQUE PRESENTATION OF NON-SMALL CELL LUNG CANCER WITH WIDESPREAD PULMONARY NODULES**
Presenter(s): Ayesha M. Saad, MD . Farid Khan, MD . Muhammad Imtiaz, MD.

BREAKOUT ROOM 8 | **OBSCURE GASTROINTESTINAL BLEEDING ASSOCIATED WITH PYCNOGENOL (PINE BARK EXTRACT) USE**
Presenter(s): Vamsi Priya Aravally, MD

BREAKOUT ROOM 9 | **A SINGLE CENTERED RETROSPECTIVE REVIEW OF COLONOSCOPY RESULTS IN PATIENTS WITH POSITIVE COLOGUARD**
Presenter(s): Muhammad Sajeel Anwar, MD

BREAKOUT ROOM 10 | **RESCUE SUCTION MECHANICAL THROMBECTOMY OF MEDIUM-SMALL VESSEL OCCLUSION IN A PEDIATRIC PATIENT PRESENTED WITH ACUTE ISCHEMIC STROKE**
Presenter(s): Professor Yahia M Lodi, MD, FAHA, FANA, FAAN

BREAKOUT ROOM 11 | **PSYCHIATRIC SEQUELAE OF THE COVID-19 INFECTION IN ADOLESCENTS**
Presenter(s): Rachel Aber

BREAKOUT ROOM 12 | **CANCER RELATED FINANCIAL TOXICITY DURING THE COVID-19 PANDEMIC**
Presenter(s): John Panzone BS, Maximillian S. Wu BS, Christopher Welch, Joseph M. Jacob MD, Oleg Shapiro MD, Alina Basnet MD, Gennady Bratslavsky MD, Hanan Goldberg MD

BREAKOUT ROOM 13 | **COVID-19 AND MENTAL HEALTH DISORDERS IN CHILDREN AND ADULTS: PROGRESS TOWARDS A SYSTEMATIC REVIEW**
Presenter(s): John Clay

SESSION 1 BREAKOUT ROOM 1

ANALYSIS OF MENTAL DISTRESS AND FOOD INTAKE ATTRIBUTES USING EDA TECHNIQUES

Kanishk Barhanpurkar1, Lina Begdache2, Saloumeh Sadeghzadeh3
1Thomas J. Watson College of Engineering and Applied Science, Binghamton University, Binghamton, NY 13902, USA
2Health and Wellness Studies Department, Binghamton University, Binghamton, NY 13902, USA
3School of Management, Binghamton University, Binghamton, NY 13902, USA

Introduction:
Dietary intake plays an important role in the development of physical and mental health. Vital nutrients support day-to-day activities and biological processes. The physical health parameters can be easily correlated with the type of dietary intake. However, mapping of mental health parameters is still an area in need of further research. It is a strenuous task as it is widely dependent on a broad spectrum of attributes.

Methods:
The dataset is collected from a survey study on a group of 227 individuals who are categorized based on their gender and age. A questionnaire that contains 26 parameters is used for collecting information related to dietary intake and mental health parameters.

Results:
We have mapped the mental health and dietary intake parameters using Exploratory Data Analysis (EDA) and Data Visualization techniques. The Pearson Correlation Coefficient method is used for the generation of correlation between the attributes and the lies in the range of -0.34 to 0.92.

Conclusion:
Distinctive patterns have been observed that describe the correlation between food intake and mental distress parameters. Additionally, the research outcomes also describe the attributes that help to elevate the factors for mental well-being and emotional health.

SESSION 1 BREAKOUT ROOM 2

Cellular Localization of Dbp2 and Identification of its Interaction Partners

Rebekah Lubinga, Binghamton University

Dbp2 is a DEAD-box RNA helicase in S. cerevisiae, whose main function is connected to the ribosomal RNA processing and transcription. Interestingly, the localization of Dbp2 is also highly dependent on the presence of glucose, which enables us to study how cellular stress impacts gene expression machinery. Studies from the Tran laboratory show that the rapid nuclear export of Dbp2 in the absence of glucose. Furthermore, unpublished studies from the Tran lab have linked specific phosphorylation events on Dbp2 to glucose-dependent localization. To determine if phosphorylation affects Dbp2's function and localization, our first step is to generate mutant Dbp2 proteins that localize to the nucleus or the cytoplasm, irrespective of the presence of glucose. To this end, site-directed mutagenesis was used on plasmids containing wild type DBP2 genes to convert codons encoding select serine residues to codons that would encode amino acids mimicking the dephosphorylated and phosphorylated state of Dbp2. Following transformation of these mutant-expressing plasmids and a wild type DBP2 as a control into a dbp2Δ strain, a serial dilution spot assay was performed on glucose and galactose plates (mimicking – glucose). We observed that both the phosphorylation mutants (both the non-phosphorylatable and the phosphor-mimetic) grew substantially better than our wild type Dbp2 and empty vector. This was unexpected and will be followed up with future studies in the Tran laboratory. In addition to mutant Dbp2 generation, we also set out to identify protein interaction partners of Dbp2 in the cytoplasm. Our goal was to use proximity-dependent biotin identification (BioID) using an AirID biotin ligase tag to identify Dbp2's cytoplasmic interaction partners. Following unsuccessful isolation of proteins, immunofluorescence was performed to verify the localization of the ligase tag. Immunofluorescence indicates the AirID tag is more cytoplasmically localized in comparison to nuclear Dbp2, thus, the study was inconclusive. Due to the mislocalization of the AirID tag, in future studies we plan to use different versions of the biotin ligase tag such as the TurboID tag.

SESSION 1 BREAKOUT ROOM 3

TRACKING LIPID DROPLET ACCUMULATION IN PDAC CELLS

Olivia A Cartwright1, Mingyuan Zhang2, Ming Li2, Kaiming Ye2, Fake Lu2
1Department of Mechanical Engineering, 2Department of Biomedical Engineering, Binghamton University, State University of New York, Binghamton, NY, 13902, USA

Introduction:

Pancreatic ductal adenocarcinoma (PDAC) is one of the deadliest cancers worldwide today. Cancer cells have altered lipid metabolism which supports them to proliferate faster than normal cells. Understanding lipid and fatty acid synthesis and storage in PDAC cells is an important step to develop strategies for more effective treatments. Lipid droplets (LDs) are lipid-rich cellular organelles which are vital to cell function. LDs can be imaged by fluorescence imaging with extracellular labeling. However, since LDs are highly dynamic, fluorescence staining cannot label the newly generated droplets or characterize the chemical composition of the LDs. Instead, we use stimulated Raman scattering (SRS) microscopy to image and characterize LDs in PDAC cancer cells to understand their response in a fatty acid environment.

Materials and Methods:

This research will use SRS microscopy to image the LDs with deuterium labeling. In the experimental group, PDAC cells were passaged into a nutrient deficient environment of low-glucose DMEM with 10% FBS. They were then left for 6, 12, 18, and 24 hours. At the end of these periods, the cells were imaged with SRS microscopy at wavelengths of 2854 cm-1 (C-H). In another group, the cells were passaged into a nutrient deficient environment, with the addition of deuterium-treated oleic acid (uM level). They were left for 6, 12, 18, and 24 hours and then imaged using SRS at both 2854 and 2112 cm-1 (C-D).

Results and Discussion:

The images of the control and experimental groups were compared. Images taken at 2854 cm-1 show the carbon-hydrogen bonds within the lipids droplets of the cells. Images taken at 2112 cm-1 show carbon-deuterium bonds. As the deuterium-treated oleic acid was the only deuterium-containing compound in the medium, any lipid droplets shown in the 2112 cm-1 were metabolized from the oleic acid. Using this imaging approach, we can monitor the dynamic process of LDs formation in PDAC cells.

SESSION 1 BREAKOUT ROOM 4

DEVELOPING AN EFFECTIVE SHIN SPLINT PREVENTION PROGRAM: A PILOT STUDY

Seth Spicer, ATC, CSCS, MSc Utsav Hanspal, MD, MPH, CAQSM
Ascension Lourdes Orthopedics & Sports Medicine, Binghamton, NY

Medial tibial stress syndrome (MTSS) is an overuse injury that results in pain over the distal third of the medial border of the tibia. MTSS is the most common musculoskeletal injury for runners, responsible for up to 60% of all lesions causing pain. MTSS results in significant medical disqualification for multiple athletes including military recruits. There is little quality research supporting an effective prevention program. This research aims to study the effect of a preventative strengthening program on the incidence and intensity of shin splints in high school aged athletes.

Methods:
Fall student athletes from six schools participating in the Ascension Lourdes Sports Medicine Program will be divided up into two matched groups for size (SVEE & Candor, ME & Vestal, Tioga & Greene). The study will follow a prospective case-control study design. The control group will complete their routine strength and conditioning training prior to the season. The case group will complete a novel 6-week progressive resistance and plyometric training program prior to the beginning of fall practices. T-Tests will be performed on the data to compare for the primary outcome i.e. incidence of self-reported lower leg pain. The alternative hypothesis is that there will be a statistically significant difference in the incidence of MTSS between the two groups. These results would suggest that a 6-week summer training program that includes progressive lower leg strength and plyometric training could be effective in reducing the incidence of MTSS in high school fall athletes.

SESSION 1 BREAKOUT ROOM 5

23-YEAR-OLD FEMALE WITH METASTATIC GASTRIC ADENOCARCINOMA

Khandokar Talib, MD; Gowthami Ramer, MD; Mark Shumeyko, MD; UHS Wilson Medical Center, Johnson City, NY 13790

Introduction:

Gastric cancer is the fourth most common malignancy in North America. Since there are no screening recommendations in place, most gastric cancers are detected at a later stage in USA. The average age of occurrence of gastric cancer is >40 yrs. Some of the most common risk factors include Helicobacter pylori infection, atrophic gastritis, ethnicity, dietary factors.

Case discussion:

A 23- year-old female with a past medical history of attention deficit hyperactivity disorder presented with complaints of worsening dry cough and exertional dyspnea for 2 months. The patient also reported experiencing poor appetite, occasional nausea, vomiting, and unintentional weight loss of 10 pounds in 2 months along with low back pain. The patient does not smoke cigarettes, drinks alcohol socially. No significant family history. Physical examination was unremarkable. Lab was normal except mildly elevated ALP. CT chest showed a miliary pattern of the lung parenchyma with multifocal patchy infiltrates, along with mediastinal and hilar lymphadenopathy. CT abdomen and pelvis showed a calcified mass at the lesser curvature measuring up to 36.4 mm, with mixed attenuation lesion in the left hepatic lobe along with portal, celiac, and retroperitoneal lymphadenopathy; metastatic lesion within the L2 vertebral body with mild superior endplate compression and soft tissue extension to epidural space along with left portal venous thrombosis. Upper GI endoscopy was performed which showed a large, infiltrative, and ulcerated, noncircumferential mass on the lesser curvature of the gastric body. Biopsy of the gastric mass revealed Infiltrating adenocarcinoma, poorly differentiated with mucous and signet -ring features. Tumor cells were negative for E-cadherin expression and HER-2 immunohistochemical staining and positive for PD-L1 and MYC amplification. Mainstay of treatment is Chemotherapy, whose intention is Palliative.

Conclusion:

Significant progress has been made in understanding gastric adenocarcinomas but still, the pathways leading to the development of gastric cancer are unclear. Improvements in micro-array-based gene expression profiling can help us to better delineate the tumor behavior and help us with treatment.

SESSION 1 BREAKOUT ROOM 6

RAPID PROGRESSIVE GLOMERULONEPHRITIS AND DIFFUSE ALVEOLAR HEMORRAGE REVEALING A CASE OF LATE ONSET SYSTEMIC LUPUS ERYTHEMATOSUS:

Towfiqul Chowdhury, Nabila Zaman, Khandokar Talib, Zabi Hayati, Mohammad Quasem. UHS, Wilson Medical Center, Johnson City, Ny-13790

Introduction:
Late-onset systemic lupus erythematous (SLE) can be a difficult diagnosis as it often lacks the classic manifestations. This unique case is about a 76-year-old female with no rheumatological disease initially presenting with vague symptoms then developing complications of lupus nephritis and pulmonary-renal syndrome leading to a fatal outcome.

Case Presentation:
A 76-year-old female presented with complaints of upper abdominal pain and nausea. She had history of hypertension, atrial-fibrillation and GERD. Her medications included amlodipine, hydrochlorothiazide, metoprolol, lisinopril, and rivaroxaban. Vitals were stable. Physical examination revealed pale conjunctiva and epigastric tenderness. Electrocardiogram revealed atrial fibrillation. Laboratory study demonstrated low hemoglobin with elevated BUN, creatinine, CRP and ESR. Urinalysis showed 3+ protein and RBC >180/HPF. Abdominal imaging were non-conclusive. A renal biopsy showed severe glomerulonephritis with 60% cellular crescents in glomeruli with immunofluorescence staining of the immune complexes for IgA and C3. This demonstrated rapidly progressive glomerulonephritis (RPGN), indicating class IV lupus nephritis. An autoimmune panel showed low C3 & C4, elevated ANA, positive anti-ds DNA and lupus anticoagulant antibodies. Based on the biopsy and acute renal failure, she was started on high doses of methylprednisolone. Unfortunately, renal function kept declining. Transthoracic echocardiogram unveiled a severely dilated left atrium with echogenic structure (likely clot) and normal EF, confirmed by transesophogeal echocardiogram. Apixaban was initiated. On day 11, a rapid response was called due to acute dyspnea and hypoxia. A chest x-ray showed severe pulmonary edema which required emergent hemodialysis. During dialysis, she experienced massive hemoptysis and went into cardiac arrest. She expired after 18 minutes of CPR. The autopsy reported RPGN with DAH.

Conclusion:
Delayed treatment of SLE can lead to fatal outcomes as shown in our case. We would like to emphasizes the necessity of a high level of suspicion for late-onset SLE in elderly patients presenting with recent onset of systemic signs and symptoms to allow for an earlier diagnosis and prompt management.

SESSION 1 BREAKOUT ROOM 7

THROMBOTIC THROMBOCYTOPENIC PURPURA: A RARE CAUSE OF SEVERE ACUTE KIDNEY INJURY

Hatem Najar1, Laurene Tuider1, Mohammad Quasem1; 1United Health Services Hospitals, Johnson city, NY.

Introduction:

Thrombotic microangiopathy (TMA) is a serious disorder characterized by a microangiopathic hemolytic anemia and thrombocytopenia. Although severe acute kidney injury (AKI) is a common manifestation of TMA, it remains rarely described in reported thrombotic thrombocytopenic purpura (TTP) cases. We present a rare case of TTP in which the patient had severe AKI and uremic symptoms.

Case Presentation:

A 76-year-old African American male with past medical history of diabetes mellitus type II and hepatitis C presented with altered mental status. Vitals were normal. Initial laboratory findings revealed severe acute kidney injury (creatinine of 4.7 mg/dL, BUN of 65 mg/dL, EGFR of 13 mL/min/1.73m2), hyperkalemia, thrombocytopenia (platelet count of 8000/uL) and anemia (hemoglobin level of 9.1 g/dL). A peripheral blood smear revealed 8-10% schistocytes suggesting TTP (Figure 1). Patient was started on plasmapheresis and Prednisone. ADAMTS13 activity was < 5%, confirming the diagnosis of TTP. The course of hospitalization was marked by an initial clinical improvement. However, on day eight of admission, after the initiation of Rituximab, plasmapheresis was held for one day to avoid Rituximab washout. This led to a relapse of TTP and a concomitant worsening of creatinine and EGFR. The patient was resumed on daily plasmapheresis, weekly Rituximab, and was initiated on Caplacizumab. Ultimately, there was a significant clinical improvement with normalization of kidney function, platelet count and ADAMTS 13 activity (Table 1). Patient was subsequently discharged home.

Discussion:

TTP and Hemolytic uremic syndrome (HUS) are the two main forms of TMA. Historically, the distinction between these two disorders was mainly clinical: TTP has more neurologic involvement and worse thrombocytopenia, while HUS has more severe renal involvement. Nowadays, TTP is diagnosed with low ADAMTS 13 activity, typically less than 10%. Although renal involvement with proteinuria and hematuria are commonly observed in TTP, the consensus is that in TMAs, AKI is the hallmark of HUS. Our case illustrates that severe AKI can still be one of the manifestations of true TTP. We wanted to emphasize that its presence should not be a criterion to rule out the diagnosis of TTP, possibly causing a delay in treatment.

SESSION 1 BREAKOUT ROOM 8

A SHOCKING CASE OF PLATELET DISAPPEARANCE!

Authors: Altif Muneeb, Pranava Ganesh, Wajeeh ur Rehman, Hisham Kashou, United Health Services, Wilson Medical Center

Abstract:
GPIIb/IIIa inhibitors (e.g Tirofiban, abciximab, eptifibatide) are associated with rapid onset thrombocytopenia, within minutes to hours after exposure. Here, we present a rare case of Tirofiban-induced acute severe symptomatic thrombocytopenia with rapid complete recovery after discontinuation of the drug.

Clinical course/Summary:
65 years old male with a history of coronary artery disease, congestive heart failure, diabetes mellitus, hypertension, and dyslipidemia presented to the hospital with acute onset chest pain that started 45 minutes before arrival. EKG revealed anterior wall ST-elevation myocardial infarction. He received 4000 units of IV heparin and was emergently taken to the cardiac catheterization lab. Culprit ostial-proximal LAD lesion with filling defect suggestive of thrombus was seen, successful PCI was done with a 3.0 x 20 mm Synergy stent. Due to the presence of a filling defect patient was started on IV Tirofiban, the medication was continued for about 11 hours after which he developed diffuse petechiae and a blood blister in his mouth that ruptured, his platelet count was noted to be 4 x 10^3/uL (125 - 245 x 10^3/uL) while the platelet count 20 hours ago was 254 x 10^3/uL. A manual review of the peripheral film by the pathologist confirmed severe thrombocytopenia. Heparin-induced platelet antibody was negative and the patient did not have a prior history of heparin exposure in the last 6 months. Tirofiban infusion was immediately stopped. Platelet counts were monitored every 4 hours with gradual improvement in the platelet counts to 40 x 10^3/uL in the next 24 hours. Follow-up after 1 week showed complete resolution of thrombocytopenia with platelet counts improved to 369 x 10^3/uL.

Conclusion:
Platelet counts should be closely monitored after starting a patient on GPIIb/IIIa inhibitor. In case of thrombocytopenia, the drug should be immediately discontinued to prevent life-threatening bleeding. Psuedothrombocytopenia is a laboratory artifact seen with these drugs and can be eliminated by examination of peripheral film and repeating platelet count.

SESSION 1 BREAKOUT ROOM 9

SEVERE LUMBAR DISC HERNIATION COMPRESSING NERVES OF THE CAUDA EQUINA IN A DIVISION 1 ATHLETE: A CASE REPORT

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Introduction:
While lower back pain can be common in the collegiate athlete population, the occurrence of a severely herniated lumbar intervertebral disc causing radicular symptoms is relatively rare, especially in the absence of significant trauma involving compressive or injurious forces. Case History: An 18-year-old female Division 1 athlete at Binghamton University presented with a 1-month history of right buttock pain and numbness extending into her posterior leg, without inciting trauma or injury. Her pain was exacerbated with sitting and certain sleeping positions, and made training and gameplay difficult. The athlete denied any saddle anesthesia or bowel and bladder issues.

Physical Examination:
No tenderness to palpation over her lumbar spine, sacroiliac joints, or piriformis muscles bilaterally. Strength and sensation was intact across both lower extremities. Patellar reflexes normal and symmetric; Achilles tendon reflexes were rated 1+ bilaterally. No clonus. Positive straight leg raise and Lasegue's maneuver on the right, along with a positive slump test. Imaging Findings: MRI demonstrated central L4-L5 disc extrusion causing severe spinal canal stenosis and compression of the cauda equina. There was also found to be disc protrusion at the L3-L4 level causing moderate spinal canal stenosis.

Treatment Course:
The patient was given a course of prednisone and referred to a neurosurgeon. Physical therapy and abstinence from sports were prescribed initially given her young age and the lack of "red flag" symptoms of cauda equina syndrome. After four months, she continued to experience radicular symptoms with activity. The decision was made to undergo elective microdiscectomy including hemilaminotomies and foraminotomy of the L4/5 levels. A small fragment of detached disc material was also removed from the spinal canal during the procedure.

Outcome:
Since her procedure, the athlete has not had any further radicular symptoms, and has only very mild pain and stiffness concentrated in her lower back. It is anticipated that all restrictions will be lifted three months from her date of surgery.

SESSION 1 BREAKOUT ROOM 10

THE LADY WINDERMERE SYNDROME: A CLASSIC CLINICAL AND RADIOLOGIC PRESENTATION

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Introduction:
Named after Oscar Wilde's character Lady Windermere, Lady Windermere Syndrome (LWS) is an infrequently encountered pulmonary disease associated with Mycobacterium avium complex (MAC). Elderly white females with volitional cough suppression leads to stasis of mucous with subsequent bronchiectasis. We report a case that fits the criteria of LWS along with the diagnostic work-up and management.

Case Presentation: An 84-year-old Caucasian female was evaluated for chronic non-productive cough and intermittent dyspnea. She was a non-smoker, and did not have fever, hemoptysis, night sweats, weight loss or wheezing. Medical history was significant for hypertension. Chest x-ray and pulmonary functions tests were unremarkable. Chest CT revealed 1.4cm x 0.7cm density in the right upper lobe (RUL) and scattered pulmonary nodular infiltrates. Biopsy of RUL density was negative for malignancy. She continued to have cough and reported “have not been coughing up much” during subsequent follow-ups. A repeat chest CT showed increasing size (1.6cm x 1cm) of RUL nodular density, tree-in-bud pattern and scattered nodular-cystic bronchiectasis. Endobronchial ultrasound guided biopsy of RUL mass and bronchioalveolar lavage (BAL) were performed. Pathology was negative for malignancy. BAL fluorescent microscopy was positive for acid fast bacilli and PCR revealed MAC DNA. BAL culture grew MAC. Azithromycin, rifampin and ethambutol were initiated. Within 6 months of treatment, she reported significant improvement in symptoms along with negative sputum studies.

Discussion:
LWS is a lung disease of elderly females with persistent nodular and cystic bronchiectasis, and tree-in-bud-pattern most commonly involving right upper and middle lobes, and lingula. Impaired bronchial clearance is considered as the proposed pathophysiological mechanism leading to mucous retention and eventual colonization of MAC. A one-year antibiotic treatment consists of clarithromycin or azithromycin, rifampin and ethambutol. Conclusion: The clinical picture of our patient accounts for all the features of LWS, these include; elderly white female with chronic cough suppression, persistent nodular bronchiectasis in the absence of predisposing lung disease and MAC in bronchial secretions. BAL increases diagnostic yield for MAC simultaneously ruling out other etiologies as well as expedites treatment initiation.

SESSION 1 BREAKOUT ROOM 11

ONYX EMBOLIZATION OF A MULTILOCULATE SKULL-BASED VASCULAR TUMOR WHICH FEED ONLY BY THE BRANCH OF THE OPHTHALMIC ARTERY PRESENTED WITH MASS EFFECT AND MID-LINE SHIFT

Casey Manzanero*, Ryan Hart* Yahia Lodi, NYUHS Hospitals/SUNY Upstate Binghamton Clinical Campus.

Introduction:
In additional to middle meningeal artery (MMA)feeders, ophthalmic artery (OA) are present in the skull-based meningiomas embolization prior craniotomy is associated with for better resection with reduction of time and blood loss. Solitary feeder from OA to the meningioma are rare and unknown. We are presenting an unusual skull-base tumor presented as glioblastoma-multiformis (GBM)radiographically who underwent trans-OA tumor embolization resulting in total resection.

Method: case report
Results: 75-year-old women presented with confusions and diagnosed with a large right frontal multiloculate mass with midline shift consistent with a glioblastoma. Underwent planned frontotemporoparietal craniotomy. Robust bleeding was found through the emissary veins through the calvarium and surgery was aborted. Cerebral angiogram demonstrated a single feeder from right OA with pronounce tumor blush with no feeders from the either middle meningeal artery. The decision was made by the providers and the family to go ahead with emobolization knowing the risk of potential vision loss.

Preparation:
patient was given intravenous 10 mg Decadron and intravenous 3% NaCl to treat cerebral edema/midline-shift and prevention of post embolization cell death related edema lead to clinical herniatin. 1500 mg intravenous Keppra load was given to prevent seizure related to tumor and contrast.

Technique:
A guiding catheter was placed in right internal carotid artery and guide catheter was continuously flushed with heparin and nitroglycerine mixed saline to prevent spasm. Under heparinization, a SL 10 microcatheter was placed in the OA, the feeder was identified, and a microcatheter was placed to the feeder away from the retinal artery followed by emobolization with Onyx resulting in complete obliteration. Neurological examination remained normal with preservation of vision. Endovascular team recommended for early craniotomy to prevent edema related herniation. Surgery was planned next day, patient herniated with dilated pupil on the right. Emergent right frontotemporoparietal craniotomy with total resection of meningioma was achieved with minimum bleeding. Pathology confirmed meningioma.

Conclusion:
Solitary feeder to the tumor beds via OA to the Skull-based meningioma is possible which could be embolized carefully with the preservation of vision helps total resection of tumor. Early craniotomy after embolization may prevent clinical herniation. Further studied are required.

SESSION 1 BREAKOUT ROOM 12

ASSESSING THE ROLE OF NON-NEUTRALIZING ANTIBODIES IN ANTIBODY-DEPENDENT CELLULAR PHAGOCYTOSIS OF DENGUE VIRUS INFECTED CELLS

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Dengue virus (DENV) is endemic in over 100 countries causing widespread morbidity and mortality. 400 million people are thought to be infected by DENV each year, with 100 million suffering symptomatic illness and 22,000 dying. It has been previously described that antibodies against DENV E protein can cause antibody dependent enhancement during secondary DENV infection, increasing infection. However, there are other potential antigen targets created during DENV infection. Non-structural protein 1 (NS1) is a non-structural protein that is both secreted from and expressed on the surface of DENV infected cells. IgM, IgG, and IgA isotype antibodies against NS1 can be readily detected after DENV infection. Our study aims to determine if NS1 expressing cells opsonized by αNS1 antibodies can cleared via antibody-dependent cellular phagocytosis (ADCP) by monocytes, what receptors are used in both IgG and IgA isotype mediated phagocytosis of NS1 expressing cells, and if secreted NS1 functions to protect DENV-infected cells from ADCP. To this end, we analyzed ADCP using a flow cytometry based ADCP assay. We observed IgG- and IgA-mediated phagocytosis based on the presence of target cell membrane in CD14+ effector cells. Using an αCD89 antibody known to block FcαR binding to IgA, we observed reduced phagocytosis of opsonized NS1-expressing cells with an IgA monoclonal antibody, but no change in phagocytosis using an IgG monoclonal antibody. Future studies aim to: asses the ability of FcγR to mediate phagocytosis of NS1-expressing cells, assess potential synergistic effects of IgG and IgA in mediating phagocytosis of NS1-expressing cells by monocytes, and study the effects of secreted NS1 protein in monocyte phagocytosis by sequestering αNS1 antibodies.

Funding by New York State

SESSION 1 BREAKOUT ROOM 13

AEROSOL NCMT-3 ATTENUATES SEPSIS-INDUCED ACUTE KIDNEY INJURY (AKI) BY ATTENUATING RENAL MMP-9 ACTIVATION AND APOPTOSIS

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Background:
The kidney is the most common extrapulmonary organ injured in sepsis. The current study examines the ability of aerosol nano-chemically modified tetracycline-3 (nCMT-3), a pleotropic anti-inflammatory agent, to attenuate AKI caused by intratracheal lipopolysaccharide (LPS).

Methods:
C57BL/6 mice received aerosolized intratracheal nCMT-3 (1 mg/kg) or saline, followed by intratracheal LPS (2.5 mg/kg, 24 h) 2 h later to simulate acute lung injury (ALI)-induced AKI. Tissues were harvested at 24 h. AKI and effects of nCMT-3 were assessed by renal histology and tissue/serum levels of BUN, creatinine, Kim-1 and NGAL. Renal MMP level/activity, cytochrome C, Bax, Bcl-2, caspase-3 and P38 were also measured. Renal markers IL-1β and IL-6 were assayed to determine degree of inflammation. Data are means ± SE with statistical significance at $P<0.05$ by ANOVA with Bonferroni post-test (n= 3-12/group).

Results:
ALI-induced AKI was characterized by histologic evidence of renal injury as well as increased plasma BUN, creatinine and injury biomarkers (NGAL, Kim-1). Kidney tissue from the LPS-treated mice demonstrated increased levels of inflammatory cytokines (IL-1β, IL-6), active MMP-9, apoptotic proteins (cytochrome C, Bax/Bcl-2 ratio and caspase-3) and p38 signaling. Intratracheal nCMT-3 significantly attenuated all of these markers of renal injury/inflammation/apoptosis.

Conclusions:
Pretreatment with aerosol nCMT3 significantly attenuates intratracheal LPS-induced AKI/inflammation by inhibiting renal MMP-9 activation and apoptosis, providing evidence that the local, non-invasive delivery of intrapulmonary nCMT-3 can induce systemic regulation.

SESSION 1 BREAKOUT ROOM 14

INTRAPROCEDURAL LEFT VENTRICULAR RUPTURE DURING VENTRICULOGRAPHY , A CASE REPORT AND LITERATURE REVIEW

Mohamed Salahie, MD

Introduction:
Left Ventriculography (LV Gram) is a useful diagnostic tool, performed during Coronary Angiography1. It's used to assess the Left Ventricle systolic Function, regional wall motion, the presence of aortic regurgitation, mitral regurgitation, and/or ventricular septal defect2. LV Gram complications are usually rare.

Case:
Herein we report an 84-year-old female who was admitted to the hospital with chest pain and shortness of breath. Further workup and imaging revealed a picture of acute decompensated heart failure with newly reduced ejection fraction in the setting of severe aortic stenosis. She was scheduled for a left heart catheterization to further assess her coronary anatomy as "pre-TAVR" workup. No significant coronary lesion was seen. After injecting the pigtail catheter for the LV gram, there was evidence of dye staining in the myocardium and into the pericardial space. Immediately the procedure was terminated, the pigtail was removed, and an urgent echo was done which showed evidence of a small to moderate pericardial effusion without evidence of tamponade. The patient was treated conservatively. She was discharged after a successful TAVR procedure.

Conclusion:
Most LV Gram complications reported were ventricular arrythmias, embolization of air or thrombus , contrast related complications, decompensated heart Failure, Myocardial staining. Interventional cardiologists should weighs the risks of such procedures and need to manage their complications, and they should consider avoiding doing it if it was unnecessary.

SESSION 2 BREAKOUT ROOM 1

INFLAMMATION AND LONGEVITY IN POST-WWII GUAMANIAN AMYOTROPHIC LATERAL SCLEROSIS (ALS)

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Within the framework of evolutionary medicine, environmental mismatch is a primary cause of chronic illness. In the current evolutionary biology debate on inflammation, some have argued that inflammation is more damaging in novel, "sterile" environments than in higher infectious disease (ID) "non-sterile" settings to which humans have had more time to adapt. Others have argued that inflammation is always damaging, and lower inflammation in modern populations due to decreased pathogen exposure results in increased lifespan and robust overall health. This research addresses this debate by exploring the effect of inflammation on a mysterious, high incidence focus of amyotrophic lateral sclerosis (ALS) among the inhabitants of post-WWII Guam. The uncharacteristically long duration seen in some Guamanian ALS patients, as well as the unusual reported positive association between symptom severity at onset and longer lifespan make this case study unique. In modern ALS cases, symptom severity is generally associated with high inflammation and short lifespan. This research assesses whether, in the evolutionarily "normal" (or well-matched), mid-twentieth-century Guamanian environment with higher rates of ID, inflammation is associated with disease severity and progression. Sera of Guamanian ALS and control subjects collected by NIH researchers from 1950-1990 were tested for 11 pro- and anti-inflammatory immunoregulators –via chemiluminescent enzyme-linked immunosorbent assay (ELISA). Cox proportional hazard models were used to analyze data. Findings suggest that increased inflammation is associated with increased risk of death and that neurodegenerative diseases share an inflammatory component across diverse environments. Results also suggest it is imperative that future research on therapeutic targets for ALS focus on inflammation early in disease.
This research was funded in part by Sigma Xi Grants in Aid of Research

SESSION 2 BREAKOUT ROOM 2

EFFECT OF MODERNIZATION ON SERUM C-REACTIVE PROTEIN IN HEALTHY CHAMORU MALES AND FEMALES LIVING IN POST-WWII GUAM

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This research examines the effect of modernization on serum c-reactive protein (CRP) levels in males and females living in post-WWII Guam. After WWII, northern Guam developed rapidly (e.g., hotels, paved roads, imported foods and a cash economy), while the southern half of the island retained a traditional subsistence economy, thatched-roof housing and unpaved dirt roads. Sera collected from healthy Guamanian Chamoru males and females by NIH researchers between 1950 and 1990 were evaluated for CRP (N:70). The analysis of the relationship between location (north and south) and CRP level, using a Mann Whitney U Test, yielded a z-score of -.58 and a p-value of .56. Additionally, age (under 50 years and over 50 years) and CRP yielded a z-score of -.02 and a p-value of .98; sex and CRP yielded a z-score of -.27 and a p-value of .79. According to this study, modernization did not significantly affect baseline serum CRP levels in healthy Guamanians.

SESSION 2 BREAKOUT ROOM 3

TRACKING THE EVOLUTION OF THE SARS-CoV-2 SPIKE GLYCOPROTEIN IN VARIANTS OF CONCERN

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Introduction:
The ability of SARS-CoV-2 to infect humans is due to the spike (S) protein's attachment to the human angiotensin-converting enzyme (hACE2) receptor. The high mutation rate of SARS-CoV-2 leads to variations in the S-Protein which can impact the pathogenicity and spread of SARS-CoV-2. Here we investigate the non-synonymous mutations occurring in the Spike Glycoprotein of SARS-CoV-2 to visualize its evolution.

Methods:
We downloaded all SARS-CoV-2 S-protein sequences published on NCBI Virus for samples collected between May 28th-December 28th 2021. Sequences were aligned and edited using MAFFT and MEGA. Summaries of variations observed during each week were exported from MEGA, and variation frequencies for each position were computed in Excel. SWISS Model was used to create a model of the Delta variant S-protein.

Results:
Between May and November 2021, Delta rapidly became the dominant SARS-CoV-2 variant due to its unique amino acid variations, most of which approached fixation by the end of October 2021. In December of 2021, many variations associated with Delta fell rapidly in frequency due to the emergence of the Omicron variant. All variations that were found to have high frequency in the last week of 2021 belonged to the Omicron variant.

Conclusion:
Tracking the trends in SARS-CoV-2 spike protein variants' frequencies and the emergence of new variants is essential to re-designing effective booster vaccines, therefore reducing the amount of SARS-CoV-2 infections worldwide.
This project and the First-year Research Immersion (FRI) Program is supported through funding via Binghamton University's Provost Office.

SESSION 2 BREAKOUT ROOM 4

A CASE REPORT OF METFORMIN ASSOCIATED LACTIC ACIDOSIS IN A YOUNG INDIVIDUAL WITHOUT SIGNIFICANT COMORBIDITIES

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Introduction:
Although Metformin is one of the main pillars of type 2 diabetes mellitus (T2DM) treatment, metformin-associated lactic acidosis (MALA) remains a feared complication. Its wide array of non-specific symptoms can make early recognition challenging. Our aim is to highlight a rare, yet potentially fatal condition caused by a widely prescribed medication and to emphasize on the importance of a timely diagnosis, prompt and appropriate treatment and patient education.

Case Report:
A 48-year-old woman with a past medical history of T2DM on Metformin 1000 mg twice daily and Glipizide was brought to the emergency department (ED) with the chief complaint of excessive thirst followed by progressive lethargy and altered mental status. EMS discovered a blood sugar of 77 mg/dL that dropped to 56 mg/dL, requiring 1 mg of intramuscular glucagon. Initial laboratory data revealed severe lactic acidosis (18 mmol/L), leukocytosis, transaminitis, elevated troponin, lipase and decline in renal function. Patient required mechanical ventilatory support given her extremely low pH. With the presence of high lactic acid level associated with severe metabolic acidosis, high anion gap and elevated serum osmolarity, a diagnosis of MALA was made. Emergent hemodialysis was initiated. The lactic acidosis resolved (Figure 1) and pH approached normal values within 24 hours after dialysis. Patient was successfully extubated and weaned off pressors by day 3 of admission. Her kidney function also improved greatly.

Discussion:
T2DM can decrease the threshold for lactic acidosis in the presence of a secondary stressor due to underlying alterations in baseline redox potentials. While acidemia and dehydration contribute to hemodynamic instability, Metformin also has a negative inotropic effect decreasing cardiac output and hepatic circulation. Early hemodialysis along with hemodynamic stability and glycemic control is the most definite treatment for MALA. It may be helpful to have MALA as an active differential diagnosis in patients taking metformin with lactic acidosis with a low threshold for hemodialysis.

SESSION 2 BREAKOUT ROOM 5

TREATMENT OF A MOREL-LAVALLÉE LESION OF THE LEG WITH DEBRIDEMENT AND DOXYCYCLINE SCLERODESIS: A CASE REPORT

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Introduction:
Morel-Lavallée lesions are a type of closed soft-tissue degloving injury of the hypodermis, commonly associated with high-energy trauma. Development of complications such as bacterial colonization, formation of pseudocysts, skin necrosis, and deformity can occur if not treated appropriately.

Case History:
A 51-year-old female was referred about two weeks after falling approximately 10 feet from a ladder, shearing the lateral aspect of her right leg along the rungs as she fell. While the skin over her leg was still largely intact, she noticed a deformity and fluid accumulation over the outside of her leg, along with significant bruising and intermittent drainage from a small wound.

Physical Examination:
The patient had swelling and fluctuance extending from the lateral aspect of the right thigh to her anterolateral midleg. Within this area, there was a noticeable solid mass, more mobile distally. Overlying skin was ecchymotic, with a small (<1 cm) scabbed wound. Motor testing showed intact strength in leg dorsiflexors and evertor muscles. Imaging Findings: MRI revealed a large fluid collection within the anterolateral leg, with separation of the deep adipose tissue from its underlying muscle fascia. No tears within adjacent muscle tissue were seen.

Treatment Course:
Despite an in-office, ultrasound-guided aspiration yielding over 100 cc of bloody fluid, the fluid quickly reaccumulated within a few days. The decision was taken to proceed with incision, drainage and debridement of the lesion area, with use of doxycycline powder as a sclerosing agent to fibrose and obliterate the fluid cavity. Following the removal of threatened skin and the segment of detached adipose tissue, the doxycycline powder was spread throughout the remaining defect.

Outcome:
The patient underwent intravenous antibiotic therapy after intraoperative cultures grew gram-negative bacilli. Her wound has healed well without any re-accumulation of fluid, and she has returned to full activity without pain.

SESSION 2 BREAKOUT ROOM 6

ALCOHOL-INDUCED CARDIOMYOPATHY PRESENTING WITH LEFT VENTRICULAR APICAL THROMBUS: Case Report

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Introduction:
Chronic excessive alcohol consumption has been strongly associated with alcoholic cardiomyopathy (AC). We report a case of dilated cardiomyopathy with associated complications, necessary work-up and management.

Case Presentation:
A 44-year-old male was admitted to our hospital with progressive exertional dyspnea, orthopnea and lower extremity edema for 3-4 weeks. Family history was significant for CAD in his mother. Social history was significant for consuming at least a pack of 12 beers everyday and 30-pack-years smoking. Vitals revealed a pulse of 109/minute and blood pressure of 174/136mmHg. On physical examination, he had diffuse crackles over lungs. Heart sounds were normal with no jugular venous distension however, there was significant legs edema. EKG showed normal sinus rhythm with no ischemic changes. Chest x-ray revealed cardiomegaly and pulmonary edema (Figure 1). Blood work showed a troponin 0.038ng/mL and BNP of 12,700pg/mL. A CT chest with contrast showed a filling defect in the left ventricle (LV) apex suspicious for a thrombus (Figure 2). Transthoracic echocardiogram revealed biatrial enlargement and dilated ventricles with severely reduced ejection fraction <15% (HFrEF), and a filling defect (1.8x1.3cm) at the LV apex consistent with a thrombus (Figure 3). Patient was treated with IV furosemide and medical heparin therapy. A cardiac catherization was unremarkable for CAD. During the course of hospitalization, patient had appropriate diuresis and ambulated without dyspnea. He was started on guidelines-directed medical therapy (GDMT) for HFrEF including diuretics, beta-blocker and angiotensin receptor-neprilysin inhibitor and discharged on warfarin. Detailed alcohol and tobacco cessation counseling was provided.

Discussion:
Our patient fulfills the criteria for AC that incudes long-term heavy alcohol consumption, reduced EF, dilated LV and absence of CAD. Excessive ethanol (defined as >80 g/day) use has been established as one of the leading causes of secondary dilated cardiomyopathy. Acetaldehyde, a toxic metabolite, from ethanol causes oxidative stress and impairment of myocyte protein synthesis.

Conclusion:
We recommend critical analysis of patient's history for alcohol consumption in a young patient with cardiomyopathy and negative work-up for CAD. These patents should be promptly evaluated for intracardiac thrombus. Along with GDMT for cardiomyopathy, these patients benefit from complete alcohol abstinence.

SESSION 2 BREAKOUT ROOM 7

A VERY RARE CASE OF BRASH SYNDROME

KHANDOKAR TALIB, MD; MUHAMMAD ALI, MD; UHS Wilson Medical Center, Johnson City, NY 13790

INTRODUCTION:
BRASH (Bradycardia, Renal Failure, AV nodal Blockage agent, Shock, Hyperkalemia) syndrome is new clinical entity, we are presenting this case to improve overall management of this kind of patient.

CASE DISCUSSION:
A 61-year-old male with past medical history of hypertension, seizure disorder, CKD G3b presented to ED from walk-in for not feeling well, fatigue, confusion, slow heart rate and low BP. His medications which includes AV nodal blocker. Initial heart rate was 37 bpm, BP 84/53 mmhg. EKG findings ventricular rate 39, junctional bradycardia. AV nodal blocker was held immediately. Labs showed mild hyperkalemia 5.6 mmol/l, elevated creatinine 3.8 mg/dl (baseline 1 – 1.2), reduced GFR. A chest X-ray was normal. Transthoracic echocardiogram showed normal systolic and diastolic function. Patient remained persistently hypotensive and required multiple pressors. Patient decompensated and was intubated required ICU level of care. Cardiology team involved and received transvenous pacing. For worsening hyperkalemia despite of medical treatment, required continuous renal replacement therapy. Patient improved significantly after management by interprofessional teams.

CONCLUSION:
BRASH syndrome is a very rare presentation, only very few cases were reported. It can cause life threatening condition like severe symptomatic bradycardia even in mild hyperkalemia without any EKG findings of hyperkalemia, prompt diagnosis and management by interprofessional team will increase mortality.

SESSION 2 BREAKOUT ROOM 8

ABSTRACT: RETROSPECTIVE AND PROSPECTIVE STUDY OF THE EFFECTS OF CONTROLLED AND UNCONTROLLED COMORBIDITIES ON THE CLINICAL COURSE AND PROGNOSIS OF COVID-19 PATIENTS

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The COVID virus and its' ensuing infections have drastically complicated healthcare throughout the world. With previously present co-morbidities including, but not limited to, Type 2 Diabetes, Hypertension, Hyperlipidemia, Asthma/COPD, chronic liver disease, chronic kidney disease and heart failure already prevalent in the world, COVID infections have resulted in a additional dimension of treatment difficulty, co-morbidities and complications. This study aims to help identify risk factors that, if poorly controlled, may result in worse outcomes as a result of COVID infections. There may be some statistical correlation noted between controlled vs uncontrolled: Chronic Hypertension (P-value: <0.001), Chronic Liver disease (P-value: 0.03), HFrEF (heart failure with reduced ejection fraction), HFpEF (heart failure with preserved ejection fraction), dysrhythmia (P-Value: < 0.001), Chronic Pulmonary disease (P-value: 0.001) and Chronic Renal disease (P-value: 0.02) with COVID Outcomes at 14 day interval. There was no statistical difference ($p > 0.05$) between poorly controlled Diabetes Type 2 and Hyperlipidemia with COVID Outcomes at the 14 day interval. Each one of these organ systems/disease states can and should be their own individual research topic. This may be pursued in the future. Additionally, there are many studies out there with these types of patterns but perhaps a large meta-analysis of this data may reveal additional information that may shape how we manage these possible risk factors in lieu of other future COVID infections. No funding from any institution was provided for this study.

SESSION 2 BREAKOUT ROOM 9

ATYPICAL PRESENTATION OF ANAPLASMOSIS

Minhaz Ahmad, MD, Godson Senyondo, MD, Mark Shumeyko, MD, UHS Wilson Medical Center

Anaplasmosis is a tick-borne bacterial disease caused by Anaplasma phagocytophilum. The clinical presentation of HGA is nonspecific with symptoms such as fever, chills, headache, nausea and fatigue. HGA is known to present with mild transaminases with severe transaminases being uncharacteristic. We present an unusual presentation of Anaplasmosis. 41-year old female from upstate New York who initially presented to the hospital with a syncopal episode, preceded by nausea, vomiting, lightheadedness, fatigue, fever and right upper quadrant abdominal pain. Eight days prior, she had camped at Watertown, NY and had suspected a tick bite characterized with an erythematous itchy lesion on her left lower extremity. She was vitally stable and physical examination was unremarkable. She was found to have severe transaminases reported as AST>7500, ALT >4500, Alk Phos of 99 and total bilirubin of 3.1 with PT/INR of 28.9/2.47. Abdominal imaging showed normal Liver and Gallbladder. Her Tick-borne panel came back positive for anti-anaplasmosma phagocytophilum antibodies of 1:1024. The rest of the work up for hepatitis including viral hepatitis panel, autoimmune panel were unremarkable. Wilson disease and hemochromatosis were also ruled out. Patient was started on Doxycline with significant clinical improvement. She was discharged after seven days with complete resolution of her symptoms. the liver function normalized in 6 weeks.
Our case highlights a very atypical occurrence of severe transaminases due to HGA which is known to cause mild transaminases if any. Very few case reports are available with similar presentation.

SESSION 2 BREAKOUT ROOM 10

A RARE CASE OF CONCOMITANT HERPES SIMPLEX ESOPHAGITIS AND ESOPHAGEAL CANDIDIASIS

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Introduction:
The most common cause of infectious esophagitis n immunocompromised patients is esophageal candidiasis. Herpes simplex virus (HSV) esophagitis occurs in mostly in solid organ and bone marrow transplant recipient patients in the setting of acute rejection and intensive immunosuppression. Concomitant infection with candida and HSV esophagitis is very rare. We are presenting an interesting case of confirmed concomitant infection with candida and HSV esophagitis in an immunosuppressed patient with prostate cancer on chemotherapy and steroids.

Case report:
A 65-year-old male with stage IV prostate cancer on chemotherapy and steroids, chronic dysphagia presented with complaints of worsening dysphagia and odynophagia. Previous evaluations for dysphagia include esophageal manometry which showed type 2 achalasia and multiple endoscopies with esophageal dilatations. Because of worsening symptoms, the patient presented to the hospital. Laboratory testing revealed WBC 2900/ul, Hemoglobin 8.2g/dl, hematocrit 25.3%, MCV 96.2fl. On physical exam, there was no evidence of oral thrush. Decision was made to perform upper endoscopy to evaluate for odynophagia which showed diffuse white plaques in the entire esophagus. Histopathology demonstrated concomitant herpes simplex (HSV) esophagitis and esophageal candidiasis as evidenced by multi-nucleated giant cells with ground glass nuclei and immuno-histochemistry positive for HSV1. PAS, GMS stain showing tissue infiltrating hyphae and yeasts. The patient was started on intravenous fluconazole and acyclovir therapy. Dysphagia did not improve as expected, percutaneous endoscopic gastrostomy tube was placed. Eventually, patient opted for palliative measures and died in the next few days.

Discussion:
HSV esophagitis is usually diagnosed by endoscopy and biopsy. HSV esophagitis usually presents as ulcers with a volcano like appearance on endoscopy and biopsy showing characteristic histopathologic findings. Our patient did not have any visible ulcers on endoscopy but biopsy confirmed the presence of concomitant HSV 1 infection. High index of suspicion is necessary to diagnose concomitant HSV and esophageal candidiasis especially when the patient is not improving clinically as expected

SESSION 2 BREAKOUT ROOM 11

REFOLDING P53 WITH ZINC: INVESTIGATION INTO THE ROS PRODUCTION OF 100 NOVEL ZINC AND COPPER IONOPHORES

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Mutation of the tumor suppressor gene p53 results in cell dysfunction, specifically failure to proofread faulty DNA and induce apoptosis. Therefore, many cancers are attributed to a mutation in the DNA-binding domain of the p53 protein. Zinc binds p53 proximally to the DNA-binding domain, which aids the p53 protein in maintaining its native structure and therefore function. However, if the p53 protein undergoes a mutation that results in an insufficient amount of zinc binding, it is more likely to reside in the unfolded state. These mutations result in a failure of p53 to execute its native function of proofreading and regulating the cell cycle. Unfortunately, failure to bind zinc has serious implications, as unregulated growth of mutated cells can lead to cancer. In this study, we investigated the reactive oxygen species (ROS) production of over 100 novel zinc and copper ionophore drugs, with the purpose of finding a drug that could increase the concentration of zinc in the cell (thus shifting the equilibrium towards a refolded p53) without binding copper and generating damaging ROS. We found, using a novel ROS fluorescence assay, that compared to bare copper a majority of the ionophore drugs suppressed ROS. In addition, by analyzing structure activity relationships (SAR) of the drugs, we determined that one of the most significant predictors of ROS production was a thiocarbonyl group at the C6 position on the thiosemicarbazone scaffold. This knowledge allows for a focus on the future synthesis of drugs without a thiocarbonyl group. We anticipate that our refined assay, and the determined ROS producing or suppressing properties of the drugs from this study, will drive future investigation and development of p53-refolding drugs within in-vivo systems.

This work was supported by NIH grant R01 CA200800 and the 2021 SUNY Upstate COM Student Summer Research Fellowship.

SESSION 2 BREAKOUT ROOM 12

A COMPLEX CASE OF SYMPTOMATIC RIGHT INTERNAL CAROTID ARTERY DISSECTING PSEUDOANEURYSM WITH STENOSIS UNDERWENT ENDOVASCULAR REPAIR USING FLOW DIVERTERS-A TECHNICAL REPORT

Andrew Goldmann, Feng Hsiao, Yahia Lodi, Upstate Medical University Clinical Campus/NYUHS-Hospitals

Introduction:
16.4 percent patients diagnosed with fibromuscular dysplasia (FMD) are found to have internal carotid artery (ICA) dissection [1] which may lead to life threatening ICA dissecting pseudoaneurysm (ICADS). Endovascular repair of ICADS may be urgent when ICADS is symptomatic, potential for rupture with no good alternatives. Tortuous anatomy with FMD and ICADS can represent a significant endovascular challenge.

Objective:
We present a unique case of FMD and CADS with tortuous ICA underwent endovascular repair with surpass evolve flow diverter (SEFD). Results: 49-year-old man history of hypertension, hyperlipidemia, and left ICADS status post stenting/stent-assisted coiling in 2017, who presented with right-sided pulsatile tinnitus after a facial injury. Cerebral angiography revealed a tortuous right ICA with FMD, and presence of a right ICADS at the skull base measuring 14 x 8 mm, followed by a stenosis with a post-stenotic dilatation. ICA diameter is 4.0mm, stenotic segment being 2.0mm and dilated segment being 5.5mm. An emergency repair was performed with an informed consent knowing significant risk of disability and death; an angioplasty of the stenotic segment was performed with a 3 x 20mm Maverick balloon. Subsequently, a SEFD measuring 5 x 40 mm was deployed to cover the dissecting pseudoaneurysm, and a second SEFD measuring 5 x 20 mm was deployed covering the ICADS resulting in good apposition of SEFD and securement of ICADS. The patient was discharged home after 24 hours with 325 mg of aspirin and 75 mg of clopidogrel and good blood pressure control. At 4-week follow-up, demonstrated good recovery modified Rankin score of 0 with no symptoms.

Conclusion:
Endovascular repair of complex ICADS with SEVD devices could be an effective treatment option despite the presence of tortuous anatomy and presence of FMD. Further studies are required.

[1] Kadian-Dodov D, Gornik HL, Gu X, Froehlich J, Bacharach JM, Chi YW, Gray BH, Jaff MR, Kim ES, Mace P, Sharma A, Kline-Rogers E, White C, Olin JW. Dissection and Aneurysm in Patients With Fibromuscular Dysplasia: Findings From the U.S. Registry for FMD. J Am Coll Cardiol. 2016 Jul 12;68(2):176-85. doi: 10.1016/j.jacc.2016.04.044. PMID: 27386771.

SESSION 2 BREAKOUT ROOM 13

MIDDLE MENINGEAL ARTERY EMBOLIZATION FOR CHRONIC SUBDURAL HEMATOMA

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Objective:
The objective of this educational poster is to discuss the benefits, technique, and potential complications of middle meningeal artery (MMA) embolization.

Background:
Chronic subdural hematoma (cSDH) is a common neurologic entity that causes significant morbidity and mortality in the elderly population. Traditionally, burr holes and craniotomy are the first-line therapies. Even patients with mild to no symptoms who opt for conservative management may progress to requiring surgical intervention. MMA embolization has been shown to be a safe and effective method for treating cSDH.

Outlines:
Pre-procedural angiograms must be evaluated for potential anastomoses and anatomical variations. Careful attention is needed to avoid both direct cannulation and potential reflux of embolic agents (via anastomoses) into vessels that supply critical structures, such as the petrosal branch (may supply vasa nervorum of CN VII) and ophthalmic arteries (eye). Access is obtained percutaneously either through the ipsilateral femoral or radial artery. Selective angiography is performed to ensure proper location. Various embolic agents may be used, such as microspheres, n-butyl cyanoacrylate, or ethylene vinyl alcohol copolymer. No significant differences in embolic agents have been established. The location of the injected embolic agent will depend on the anatomy seen on the initial angiogram. For instance, when the MMA contains a common trunk between the frontoparietal and squamosal/temporal branches, the embolic agent is injected proximal to the branches to ensure adequate coverage of the supplying dura. Most often, both the anterior and posterior branches of the MMA require embolization. Studies indicate improvements in patients' modified Rankin scale (mRS) scores, reduction of hematoma size, and avoidance of neurosurgical intervention. Treatment failure, which is often defined as patients requiring neurosurgical intervention or growth or re-accumulation of the cSDH, is uncommon in most published studies. Safety profiles are relatively rare with only a few documented cases of mild to moderate complications.

Conclusion:
MMA embolization has been shown to be a safe alternative to neurosurgical intervention for cSDH. Numerous studies reveal improved mRS scores and improvement or resolution of patients' cSDH. Direct comparison of MMA embolization versus other therapies is limited.

SESSION 2 BREAKOUT ROOM 14

SQUAMOUS CELL CARCINOMA LEADS TO AMPUTATION OF GREAT TOE: A CASE STUDY

P. Genise Kennedy, DPM

INTRODUCTION:

Squamous cell carcinoma (SCC) is one of the most common skin cancers, second only to basal cell carcinoma. SCC typically arises to UV-exposed skin, but is occasionally diagnosed on non-UV exposed body parts. We present a case of a patient with a non-healing nodular ulceration to the dorsal aspect of the great toe that was diagnosed as squamous cell carcinoma on biopsy and resulted in amputation.

CASE:

62 year old Caucasian male with a history of in situ squamous cell carcinoma to his left hand and left cheek presented to the wound care center with a nonhealing, nodular lesion for several months to the dorsal aspect of the left great toe. A punch biopsy revealed the lesion to be a moderately invasive squamous cell carcinoma (SCC). Due to bony involvement seen on MRI, the decision was made to perform a partial hallux amputation and pathology examination of proximal margins confirmed the SCC lesion was resected in total. Our patient was referred to oncology and a chest CT confirmed metastasis of SCC. A PET scan and follow up with oncology has yet to be completed at the time of publication.

SESSION 2 BREAKOUT ROOM 15

TIBIO-TALO-CALCANEAL ARTHRODESIS WITH RETROGRADE INTRAMEDULLARY NAIL WITH TITANIUM TOTAL KNEE ARTHROPLASTY REVISION CONE FOLLOWING INFECTED NONUNION OF TIBIAL INTRAMEDULLARY NAIL

Rahim Lakhani, DPM, Parneet Kaur, DPM, Guido LaPorta, DPM, MS, FACFAS

Introduction/Purpose:
The nature of high-energy open tibial pilon fractures makes management extremely difficult due to the extensive bone loss and articular damage associated with these injuries. Treatment options range from external fixation (Ex-Fix), open reduction internal fixation (ORIF), tibiotalar arthrodesis, or hindfoot reconstruction 1 . Treatment plans are patient-focused providing a stable, anatomically aligned and functioning limb. As seen in trauma cases, complications and setbacks make management even more challenging. This case report documents a unique way of treating a large defect, non-union infected pilon fracture through the fixation of a retrograde tibial intramedullary (IM) nail with application of a revision titanium knee cone and multiplanar Ex-Fix.

Procedures:
Removal of infected IM nail by the Orthopedic team followed by TTC arthrodesis with retrograde IM nail and application of titanium total knee arthroplasty revisional cone and pin to bar external fixator.

Results:
A stable and pain free extremity with rectus alignment of hindfoot and ankle.

Analysis and Discussions:
The development of hardware infection after stabilization of long bone fractures is a dreadful complication. Management of these cases depends on the extent of infection, timing of diagnosis and progress of fracture union. In general, based on different stages, treatment can vary from antibiotic administration, debridement, antibiotic nails, bone grafting, removal of the nail after fracture union with IM reaming or Ilizarov frame application. This study presents a protocol for the management of bone infection and bone loss associated with IM nailing with the use of TKA cone and application of external fixator.

SESSION 3 BREAKOUT ROOM 1

BEHAVIORAL AND ENVIRONMENTAL RESIDENTIAL RISK FACTORS FOR LYME DISEASE IN THE SOUTHERN TIER OF NEW YORK

*Diana Weiss, *Danielle Carucci, *Margaret Duris, *Megan Gauck, *Katherine Lacy, *Anna Lynch, Gabrielle Pysnik, Ralph M Garruto. Laboratory of Biomedical Anthropology and Neuroscience, Department of Anthropology; Tick-Borne Disease Research Center, Binghamton University, Binghamton NY.

During the past 40 years, Lyme disease has emerged as the most widely reported vector-borne illness in the U.S., with the majority of cases occurring in the Northeastern United States. The pathogenic bacterium Borrelia burgdorferi relies on the deer tick, Ixodes scapularis, the primary enzootic vector responsible for the passage of the bacteria to humans. Behavioral risk factors for tick-borne diseases include those that increase the likelihood of being bit by a tick, including contact with vegetation, exposed skin, and spending time outdoors, all of which can occur within one's residential yard. Risk factors within the assumed safety net of the home have not been extensively studied, nor have the effects of pet ownership, or the presence of wild animals within the yard. During 2018-2019 we conducted 129 surveys of households in Broome and Chenango Counties and performed tick drags in the rear yards of 104 of these homes. Risk factors included household members' time spent in yard, type of outside activity, use of tick control methods, seasonal activity, and pet ownership, as well as specifics of the yard, including amount and type of vegetation and presence of wild animals. Outcomes of interest were collected, including the household's history of tick bites and/or subsequent Lyme infection. Using relative risk ratios and chi-square analysis, we found that significant risk factors are playing sports in the yard and greater yard biodiversity. Those who used personal protection were less likely to report a tick bite. Interestingly, we found no association between pet ownership and a human tick bite, but a negative association was found between a person who reported being bitten by a tick and had a pet diagnosed with Lyme. This study is part of our ongoing effort to understand the threat of tick-borne diseases in peri-urban and urban settings within the Southern Tier of New York.

SESSION 3 BREAKOUT ROOM 2

ENVIRONMENTAL AND BEHAVIORAL RISK FACTORS FOR LYME DISEASE IN THE BINGHAMTON UNIVERSITY NATURE PRESERVE

*Nicholas Strickland1, *Youyu Zhang1, *Ruthann Flick1, *Anna Lynch1, Cambria Weeden1, Amanda Roome2, Ralph M Garruto1. 1Laboratory of Biomedical Anthropology and Neuroscience, Department of Anthropology, Tick Borne Disease Research Center, Binghamton University, Binghamton NY; 2Northeast Center for Occupational Health and Safety, Mary Immogene Basset Hospital, Cooperstown, NY.

Lyme disease is an emerging problem in the Northeastern United States and Broome County. Lyme is caused by the pathogen Borrelia burgdorferi whose natural reservoir host is the white-footed mouse, Peromyscus leucopus. This pathogen is transmitted to humans and other mammals via the bite of an infected deer tick, Ixodes scapularis. Risk of Lyme is often associated with time spent outside, and the Binghamton University Nature Preserve is an excellent natural experimental model for studying human behaviors and clothing risks along with associated tick density and tick infection rates on trails used by Nature Preserve visitors.

Between 2013-2015, undergraduate student researchers observed risk behaviors of visitors to the Nature Preserve. They observed and recorded weather conditions, animal sightings, and clothing and behavioral risks of visitors walking/running on various trails in the Preserve during the observation periods. Between 2011-2016, researchers also collected deer ticks by dragging a corduroy cloth (1m2) along the edges of Nature Preserve trails to obtain ticks for molecular testing by PCR and Sanger sequencing to identify the presence of B. burgdorferi, the causative agent of Lyme disease. By determining the density of infected ticks, coupled with environmental and human behavioral risk factors of Nature Preserve visitors, a multivariable risk model is being created to better understand the complex interactions that result in exposure to pathogen carrying ticks. Our research team is focused on understanding the trails that are most risky, and the number of individuals with clothing and/or behavioral risks in relation to the time of day, day of the week, temperature, and weather conditions. Results indicate more visitors on Tuesdays and Saturdays with 2pm being the most popular time. On both clear and cloudy days, multiple clothing risks were observed, but clothing risks were noticeably higher on days that were sunny. This study will provide an understanding of choices made by individuals entering the Nature Preserve, a perceived high-risk area, which then can be compared to visitors traveling on walkways in residential and more built areas of Campus and of the region.

SESSION 3 BREAKOUT ROOM 3

THE ASSOCIATION BETWEEN DIET, EXERCISE, AND NEUROBEHAVIORS

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Introduction:
The purpose of this study was to investigate a potential relationship between diet quality, lifestyle factors and neurobehaviors of individuals. It was hypothesized that eating healthy and exercising improves mental state and self-motivation.

Methods:
An anonymous online survey comprising the Food-Mood and Treatment Self-Regulation Questionnaires using the five-point Likert Scale was administered online through community outreach and social media. The survey included questions on demographics, exercise habits, frequency of food group consumption, mental distress, and motivation. Data was collected between January and March 2021 and a total of 421 participants aged 18 and above completed the questionnaires. Spearman's Rho correlation was used to assess the associations between different variables. Data was analyzed using SPSS version 25.0.

Results:
There is a significant correlation between exercise, motivation, and mood with every other metric studied, such as positive dietary behaviors. Our findings also reveal strong positive associations between nutrient-dense food, motivation to perform and mental wellbeing ($P < 0.01$). Interestingly, fast-food and sugary foods produced strong negative correlation with neurobehaviors ($P < 0.01$).

Conclusion:
Diet quality may have a significant effect on dietary behaviors, exercise frequency and motivation. Further evaluation of the effect of dietary and lifestyle factors on neurobehaviors is warranted..

SESSION 3 BREAKOUT ROOM 4

CORRELATION OF FRUCTOSAMINE WITH CONTINUOUS GLUCOSE MONITOR IN PATIENTS WITH DIABETES

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Introduction:
Although hemoglobin A1C is a validated assessment of long-term glycemic control, there are important clinical scenarios where a shorter-term estimate of glycemic control is needed, e.g. red blood cell disorders or situations with rapid changes in glucose homeostasis. Hemoglobin A1C's limitations present an opportunity for fructosamine to be of clinical use in monitoring glycemic control. Fructosamine's shorter half-life may reflect average glucose changes over 2-3 weeks, in contrast to the 120 days of hemoglobin A1C. Fructosamine's lack of standardization for estimating the average glucose has limited its clinical utility. This study is undertaken to validate fructosamine for estimating the average glucose over a 2-week interval for those clinical circumstances where technical limitations of hemoglobin A1C limit its relevance.

Methods:
In this prospective study, 129 patients with a history of type 1 or 2 diabetes mellitus wore a continuous glucose monitor for 14 days. At the end, blood work, including fructosamine, was performed and compared with the average glucose obtained from the continuous glucose monitor to validate the accuracy of fructosamine in estimating the average glucose. Bivariate Pearson correlation, Chi-square analyses, and multivariable regression analyses were used to examine the linear relationships of the potential covariates of average glucose levels.

Results:
In our prospective study, we found that fructosamine has a strong relationship with average glucose. When serum fructosamine is less than 300 µmol/L, the average glucose over the previous two weeks is less than 200 mg/dL in 98% of patients. When the fructosamine is less than 300 µmol/L, the average glucose can be estimated using the formula: Fructosamine x 0.57 = average glucose.

Conclusion:
Knowing that the average serum glucose is less than 200 mg/dL in 98% of patients with a fructosamine of less than 300 µmol/L provides useful and reliable information that can significantly improve decision making in a variety of clinical situations, such as perioperative risk assessment or response to DM treatment interventions.
Supported by a grant from Lake Erie College of Osteopathic Medicine.

SESSION 3 BREAKOUT ROOM 5

STANDARDIZED RESIDENT SIGNOUT METHOD: A SINGLE-CENTER EXPERIENCE

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Introduction:
Discontinuity of care is a necessary reality in the hospital inevitably leading to patients being cared for by different providers. The process of transferring responsibility of care is referred to as "handoff," with the term "signout" defining the act of transmitting information about the patient. Non-standardized handoffs have been linked to adverse clinical events. We performed this study to assess the effectiveness and safety of a standardized signout bundle (SB).

Methods:
We performed a prospective, survey based, single-center study involving the Internal medicine (IM) residents of all levels of training at United Health Services Hospitals, Binghamton, NY. Surveys were sent to all the IM residents to assess their opinion on the effectiveness of the signout method before and 4 months after the new SB was implemented. The survey involved 10 questions scaled from 0(strongly disagree) to 10(strongly agree). Residents' answers were anonymously collected, and the mean scale value calculated for each question. Mean values before and after the implementation of the SB were compared using the T-test analysis. P values <0.05 were considered statistically significant.

Results:
Residents were overall more satisfied with the new method (Q1) (8.4 vs 6.39; p=0.001) and the conveyed information (Q5) (5.13 vs. 7.5, p= 0.028). The handoff was not considered more redundant (Q2) (5.39 vs 4.6, p=0.59). They considered that patients were better pre-identified (Q7) (5.95 vs 8.2, p=0.027) while the signout became significantly clearer and more concise (Q8) (5.95 vs. 8.4, p= 0.0007). Residents reported that the anticipated events were better conveyed with the new SB (5.6 vs 7.7, p=0.0023). No significant difference was reported regarding the time spent conveying information during handoff (Q3, Q4) (4.6 vs 5.7, p= 0.321), (5.13 vs.6.4, p=0.197). Looking up patent's chart remained a necessity with both signout methods (Q6) (3.82 vs. 5.0, p=0.056). Residents did not consider that either of the signout methods negatively affected patient care (Q10) (4.52 vs. 2.8, p=0.120). The new SB offered a better problem anticipation (Q9) (5.6 vs 7.7, P=0.024).

Conclusion:
Overall the residents were more satisfied with the new signout method(Q1) while it was also offering a significantly better problem anticipation(Q9).

SESSION 3 BREAKOUT ROOM 6

HEART FAILURE PRESENTING AS PHANTOM TUMOR OF THE LUNG

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Introduction:
Phantom tumor of the lung is an infrequent presentation of volume overload in congestive heart failure. This finding is often mistaken for a lung tumor that leads to an extensive workup and unnecessary treatments. We report this rare presentation of congestive heart failure and suggest an appropriate management.

Case Presentation:
A 75-year-old male presented to our hospital with two weeks of worsening exertional dyspnea. He did not have fever, chest pain, weight loss or night sweats. He had medical history of stage 3 chronic kidney disease, type 2 diabetes mellitus and hypertension. On physical examination, his vital signs were within limits. There were crackles over right lung lower lobe on auscultation. Heart sounds were normal and there was no jugular venous distension. Pitting edema of the legs was noted. A 12-lead EKG revealed normal sinus rhythm with no notable abnormalities. A chest x-ray revealed right lower lobe (RLL) rounded opacity appearing like a lung mass. A chest CT showed large 8 x 6 x 6.5 cm, rounded mass-like density in the RLL. Endobronchial ultrasound bronchoscopic biopsy was performed for RLL mass. A transthoracic echocardiogram showed normal left ventricular ejection fraction (LVEF) of 60-65%, and mildly impaired LV relaxation. He was treated with IV diuretics for possible heart failure with preserved EF. Patient's dyspnea and leg swelling resolved. Pathology was negative for malignancy. A follow-up chest CT 6 weeks later showed clearing of previously seen mass-like opacity suggesting a localized effusion that resolved with diuresis.

Discussion:
Our patient developed interlobar effusion that appeared like a mass on chest imaging prompting its biopsy. However, the same mass-like opacity resolved completely after diuresis. This has been reported as vanishing or phantom tumor in literature. Phantom tumor is rarely observed in decompensated heart failure patients. Mistaking it for lung tumor leads to invasive testing such as lung biopsies. Appropriate diuresis completely resolves these localized effusions.

Conclusion:
Phantom tumor should be considered in a patient with localized rounded opacity and heart failure symptoms that disappears after diuresis. Prompt recognition will enable physicians to avoid unnecessary interventions and treatments.

SESSION 3 BREAKOUT ROOM 7

WAS THE MALIGNANCY HIDING?

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Introduction:

Barrett's esophagus (BE) is a metaplastic change of the distal esophagus, whereby the normal squamous epithelium is replaced by specialized columnar epithelium with goblet cells. Chronic gastro-esophageal reflux disease (GERD) and smoking are the most common risk factors associated with BE. BE is the only known precursor lesion of esophageal adenocarcinoma (EAC). We are presenting an interesting case of esophageal adenocarcinoma arising from the stricture at the gastro-esophageal (GE) junction from previous endoscopic mucosal resection (EMR).

Case report:
A 44-year-old male presented with complaints of GERD and iron deficiency anemia. Initial upper GI endoscopy (EGD) showed long segment Barrett's esophagus C8M10 as per Prague criteria. Biopsy revealed high grade dysplasia, which was confirmed by two GI pathologists. The patient was scheduled for repeat EGD and the plan was to perform radio-frequency ablation. EGD at this time revealed 2-3 nodules at about 38cm from the incisors. Endoscopic mucous resection (EMR) was performed and pathology of these nodules revealed high grade dysplasia. During the next EGD, the patient was found to have stenosis at the site of EMR. Dilation was performed and biopsy from the stricture site showed high grade dysplasia. On subsequent endoscopies, the stricture progressively worsened, nodules appeared at the stricture site and the nodules were found to be increasing in size which raises the suspicious for malignancy. But biopsy reports came back as high-grade dysplasia. In the next EGD, we obtained multiple deep biopsies at the structure site, which finally revealed intramucosal adenocarcinoma of the esophagus (EAC). Further workup for EAC was ordered.

Discussion:
The case reported above stresses on the fact that when the suspicion of malignancy is high, multiple deep biopsies should be obtained and further evaluation like endoscopic ultrasound (EUS) should be performed. BE is the known precursor lesion for EAC. The patient described above developed EAC from the stricture site. Further research into the exact pathogenesis of metaplasia-dysplasia-carcinoma sequence is warranted.

SESSION 3 BREAKOUT ROOM 8

Pancreatic Hepatoid Carcinoma: A Very Rare and Intriguing Entity

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Co-author: Fahad Malik, GI Fellow
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Introduction:
Hepatoid carcinoma (HC) is a rare tumor with features morphologically and immunohistochemically like focal hepatocellular carcinoma (HCC). HC is extremely rare in pancreas compared to other organs with less than 50 cases reported in the literature so far.

Case description:
67-year-old male with compensated cirrhosis due to hepatitis C, was evaluated for gradual weight loss and poor appetite. Abdominal ultrasound (US) showed a pancreatic head mass only and a cirrhotic liver. Computed tomography scan of the abdomen & pelvis with contrast revealed a 10.1 cm pancreatic head mass and another mixed attenuation 4.18 cm mass in lateral right hepatic lobe suggesting a metastatic neoplastic disease. CA 19-9 levels were normal, and Alfa Fetoprotein (AFP) levels were significantly elevated. Fine needle aspiration (FNA) of the mass via endoscopic US was initially reported as pancreatic adenocarcinoma. An excisional supraclavicular lymph node biopsy had features consistent with metastatic hepatoid (hepatocellular) carcinoma. Additional immunohistochemical staining and evaluation by pathologists of the pancreatic FNA sample confirmed a hepatoid (hepatocellular) carcinoma. The neoplastic cells were strongly positive for Cam 5.2, Hep par-1, arginase-1, glypican-3, villin, beta-catenin and SMAD-4. The patient was started on atezolizumab and bevacizumab therapy.

Discussion:
The theories proposed to explain pathogenesis of pancreatic hepatoid carcinoma (PHS) are a) pancreas has ectopic liver tissue where an HC originates b) the pancreatic cells transdifferentiate into hepatocytes and c) there may be activation of the genes controlling hepatic differentiation of pancreatic cells during carcinogenesis, which are normally suppressed. Four histological subtypes are noticed on a review of 41 cases: purely HCC-like morphology, with neuroendocrine differentiation, and with acinar or glandular differentiation.
Serum AFP levels are mostly elevated and used as a marker to determine the success of therapy. Hep Par-1 is thought to be the most sensitive among all the markers.
Prognosis is difficult to predict and there is no consensus on preferred chemotherapy due to limited data. Surgical resection is the preferred treatment option.

Conclusion:
PHC should be considered in the differential diagnosis pancreatic tumors. This case will add valuable information to the limited literature on PHC.

SESSION 3 BREAKOUT ROOM 9

VEGETATION NEGATIVE CARDIOBACTERIUM HOMINIS ENDOCARDITIS?

Mohammed Faraaz RahmanM.D.1, Farid Khan M.D.2, Siya Bhagat3; 1 Internal Medicine PGY-1, United Health Services, Johnson City, N.Y. 13790; 2, Internal Medicine PGY-2, United Health Services, Johnson City, N.Y. 13790; 3 MS-3, SUNY Upstate Medical University Binghamton Campus, United Health Services, Johnson City, N.Y. 13790

Introduction:

HACEK organisms amount to approximately only 3% of cases of infective endocarditis [IE] in the community. Cardiobacterium hominis is a member of the above class. until 2008 only 61 reported cases of Cardiobacterium hominis infective endocarditis had been reported in English literature. While often encompassing majorly for cases of culture-negative endocarditis, it often takes more than 14 days for culture growth of Cardiobacterium hominis and at times requires cultures of embolic tissue or aortic valve tissue samples. Cases of Cardiobacterium hominis endocarditis are often diagnosed in the order of clinical symptoms of infective endocarditis with echocardiogram findings of valvular vegetation with or without culture growth at the time of IE diagnosis.

Case:

We present a peculiar case of a woman with history of rheumatic valve disease and eventual porcine mitral and aortic valve replacement who presented to the hospital with incidental blood cultures positive for C. Homes. Subsequent TTE and TEE were negative for any evidence of vegetation on the bioprosthetic valves.

Conclusion:

Despite a predilection of Cardiobacterium hominis to bio-prosthetic/prosthetic aortic and mitral valves, our patient did not exhibit any vegetation on imaging or display a new murmur or any signs of heart failure. Given the sensitivity of Cardiobacterium hominis in endocarditis and preclusion to prosthetic valves, the patient was treated with an antibiotic regime and duration for endocarditis despite meeting only one major DUKEs criteria.

SESSION 3 BREAKOUT ROOM 10

GASTRIC VOLVULUS IN THE SETTING OF PARAESOPHAGEAL HERNIA: EARLY RECOGNITION OF SEVERITY AND TIMELY MANAGEMENT CAN PREVENT FATAL COMPLICATIONS

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Introduction:
A paraoesophageal hernia is made of a true hernial sac containing intraabdominal organs. When containing the stomach, gastric volvulus (GV) is one of the most feared complications. Failure to recognize the severity of clinical signs and symptoms on presentation can lead to ischemia, perforation and ultimately death. We are presenting a case where GV proved to be life-threatening.

Case Presentation:
A 37-year-old female with a past medical history of Nissen fundoplication for a worsening gastroesophageal reflux disease came to the ED with the chief complaint of severe epigastric abdominal pain associated with retching, vomiting and obstipation. On admission, the patient was hypoxic and tachycardic. CT scan of the abdomen revealed a large paraesophageal hiatal hernia containing the stomach (Figure 1). Considering the suspicion of a GV, the decision was made to endoscopically place a nasogastric tube to decompress the stomach. During the procedure, the thoracic cavity and rib cage was visualized (Figure 2). The procedure was aborted. Following this, the patient became agitated and then unresponsive. Intubation was performed for airway protection. Soon after, the patient went into cardiac arrest and Cardiopulmonary resuscitation (CPR) was initiated. During CPR, the patient was requiring higher pressure of ventilation and decreased breath sounds on auscultation; with suspicion of pneumothorax due to gastric perforation, bilateral chest tubes were placed. Return of spontaneous circulation was achieved after thoracic cavity decompression with chest tube placement. Emergent exploratory laparotomy revealed a 2 cm perforation at the level of the Nissen fundoplication with 80% of the stomach within the thoracic cavity. The defect was repaired and a jejunostomy was created. Unfortunately, the cardiac arrest was complicated with severe anoxic brain injury. After one month of hospital stay, the patient was eventually discharged with a chronic tracheostomy.

Discussion: Borchardt’s triad (acute epigastric pain, retching and failure to pass an NG tube) is highly diagnostic of GV. This case underlines the importance of early recognition and surgical treatment in GV.

SESSION 3 BREAKOUT ROOM 11

INAPPROPIATE ICD SHOCKS IN A PATIENT WITH SUBCUTANEOUS IMPLANATBLE CARDIOVERTER DEFRILLATOR DUE TO MIGRATED LEAD FROM WEIGHT LOSS

Authors:
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Disclosures: The authors have nothing to disclose

INTRODUCTION:
The subcutaneous implantable cardioverter-defibrillator (S- ICD) is becoming more widespread and is particularly desirable in patients of younger age group, patient patients with venous access issues like those with end-stage renal disease on hemodialysis and in patients at an increased risk of infection. Also in order to prevent frequent device reimplants for battery consumption a subcutaneous ICD is often considered.
In this case report , we will present a case for the evaluation and management of the patient who presents with an ICD shock after significant weight loss.

CLINICAL COURSE:
A 42 year old frail Caucasian male presented to the emergency department with complaints of multiple ICD shocks. The patient denied any preceding symptoms. The patient's medical history includes multiple cardiopulmonary resuscitations, coronary artery disease, heart failure with low ejection fraction of 35-40% with long QT syndrome, insulin dependent diabetes mellitus, hypertension, dyslipidemia, deep venous thrombosis and end stage renal disease on hemodialysis for the past 8 years.
He previously underwent multiple angioplasties eventually requiring quadruple coronary artery bypass in 2012 and subcutaneous ICD implantation.
Physical examination showed a well nourished patient not in any discomfort. Vital signs showed heart rate of 76 beats/min, blood pressure of 178/75 mmHg, respiratory rate of 16 breaths/min saturation 100 % on room air. He was alert and oriented. Cardiac examination revealed normal S1 and S2 with no murmurs or additional heart sounds. No jugular venous distention or carotid bruits appreciated. Rest of his physical exam was unremarkable. EKG was done that revealed normal sinus rhythm with right axis deviation. Chest x-ray revealed displacement of the ICD lead which projected toward the left shoulder no longer in midline position (figure 1) and device interrogation was recording mild potentials.
Therefore a decision was made for lead revision. Patient was brought to the electrophysiology lab where conscious anesthesia was administered .
Subxiphoid incision was opened and lead exposed with repositioning used with tunneling tool The lead was appropriately positioned based on fluoroscopic images with single synchronized 10 J shock administered to check lead impedance. Overall impedance was found to be 22 ohms. No noise on lead noted. No immediate complications noted post-procedurally.

CONCLUSION:
S-ICDs are an important tool for the treatment of sudden cardiac death, although inappropriate shocks remain a limiting factor in the adoption of this device. When a patient presents with an inappropriate shock, it is important to rule out device or lead dislodgement or migration, pleural or pericardial effusion, and presence of hematoma. This is also a common occurrence in subcutaneous ICDs with significant weight loss as the vector changes when the device migrates.
Funding: No funding provided

SESSION 3 BREAKOUT ROOM 12

GAZE WEAKNESS NEGLECT AND SPEECH (GWNS): AN ACUTE ISCHEMIC STROKE SCALE OF LARGE VESSEL OCCLUSION (LVO) IN THE EMERGENCY DEPARTMENT FOR FASTER TREATMENT

Yahia Lodi, Irfan Khan, Ravi Pande, Anas Hourani
Yahia Lodi, Irfan Khan: NYUHS-Hospitals/Binghamton Clinical Campus
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Introductions:
Despite progress in treatment of acute ischemic stroke (AIS) with LVO, golden time are lost in emergency department (ER). CTA to identify LVO requires additional time delaying perfusion therapy. A simple AIS scale (AISS) of cortical representations of anterior circulation may rapidly predict LVO, cutdown time and initiate early mechanical thrombectomy (MT) is ideal. We proposed an AISS as GWNS, which can be performed in minutes and detects LVO. Our objective is to evaluate the feasibility and accuracy of GWNS, for identification of LVO in ER and initiate rapid MT. Additionally, this strategy avoids radiation related to CTA.

Methods:
Consecutive patients from January 2020 to September 2021 were selected. In GWNS scale, each receives 1 if positive and 0 if negative and scale ranges from 0 to 4. GWNS scale was utilized by train stroke specialist in ER. Patients' demographics including CTA/cerebral angiographic data were collected. Data was analyzed to determine the association of GWNS scale score and LVO.

Results:
109 patients, age 70.32 ± 15, GWNS 3 (range 1-4) and NIHSS 12 (range 1-27) were enrolled within 24 hours of onset with ASPECT 9 (range 4-10) who received CTA during triage for LVO. GWNS time was 1.5 minutes (range 1 -3) and CTA time was 41.3 ± 7.4 minutes (29 to 51). 58 patients, who had GWNS 3 and 4 had LVO except one who had a seizure. Of 57 LVO patients, 55 had gage in addition to weakness and/or speech impairment. Right hemispheric LVO was associated with neglect. N patient without gage and/or neglect who presented with weakness and/or speech impairment had LVO. GWNS score predicts LVO better (ROC 0.85) than NIHSS (ROC 0.67) irrespective of the involvement of right or left hemispheric vessels. GWNS score 3/4 with Gage predicted the most for LVO (ROC 0.9)

Conclusions:
GWNS is rapidly performed and detects LVO better than NIHSS. GWNS score 3/4 predict LVO, especially when gage is present. Therefore, patients with GWNS score 3/4 should be offered early MT. Further studies are needed and we are moving to direct GWNS to thrombectomy without CTA in our next phase.

SESSION 3 BREAKOUT ROOM 13

EMBOLIZATION OF BRONCHIAL ARTERY ANEURYSMS: A PRIMER FOR RESIDENTS

*Ethan Fung BS 1, Ryan Thibodeau MD 1, Abtin Jafroodifar MD 1, David Pinter MD 1, Tomas Appleton-figueira MD 1; 1 Department of Radiology, SUNY Upstate Medical University, Syracuse NY

Objective:
The objective of this educational poster is to discuss the imaging findings of bronchial artery aneurysm (BAA) and bronchial artery embolization (BAE) techniques and complications.
Background
BAA is an uncommon condition that may be secondary to lung parenchymal disease, infection, or cryptogenic. If left untreated, BAA may have devastating consequences (such as massive hemoptysis or mediastinal hematoma). Given this risk, even asymptomatic cases should be treated. BAE has been recognized as a safe and effective treatment for BAA.

Outlines:
BAA may be initially considered at the time of rupture, in which patients present with hemoptysis or mediastinal hematoma. Though, BAA may also be incidentally diagnosed in asymptomatic cases. An initial computed tomography angiography (CTA) helps evaluate the location, size, course, potential shunting, and underlying pathology/etiology. Patients with an abnormal CTA should then receive selective angiography with focus on the bronchial artery and its associated vasculature. Other vascular pathologies (shunts, feeder arteries, hypervascularity) should also be considered for embolization. Using microcatheters, BAAs and all feeding arteries are then embolized. If the aneurysm cannot be reached, the arteries should be embolized as distally as possible. Several embolic agents may be used for BAE, such as metallic coils, polyvinyl alcohol (PVA), and n-butyl-2-cyanoacrylate (NBCA). As gelatin sponges are absorbable, they should not be used alone. Since the bronchial artery may share a similar origin to the intercostal artery, which in turn shares an origin from the anterior spinal artery, there is an inherent risk of spinal cord infarction during BAE. Likely owing to their larger size, metallic coils appear to lead to a lower incidence of spinal cord infarction compared to NBCA. In addition, given the relatively high incidence of systemic artery-pulmonary artery shunting in BAA cases, using gelatin sponge, PVA, or NBCA may lead to an increased risk of pulmonary embolism.

Conclusion:
Diagnosis and treatment of BAA is crucial, even in asymptomatic patients. BAE has been shown to be an effective alternative therapy to surgery and has a relatively low rate of adverse events.
This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

SESSION 3 BREAKOUT ROOM 14

A CASE OF HYPOGLOSSAL NERVE PALSY FOLLOWING ACDF IN A PATIENT WITH KLIPPEL-FEIL DEFORMITY

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Introduction:
Hypoglossal nerve palsy (HNP) is a rare complication of cervical spine surgery. Klippel-Feil syndrome (KFS) is a congenital deformity which causes auto fusion of cervical vertebrae and has been associated with anatomical abnormalities of neck structures.

Description of Case Report:
We report on a 60-year-old male with KFS referred to the clinic with complaints of chronic neck pain and limited range of motion. Physical examination revealed poor tandem gait, difficulty with rapid alternating finger movements, and decreased sensation in the upper right extremity. MRI imaging revealed congenital auto fusion of C2-C3 with associated kyphosis and compression of the spinal cord from C3-C6. The patient was diagnosed with cervical myeloradiculopathy. An anterior cervical discectomy and fusion (ACDF) utilizing a left-sided approach was performed from C3 to C6 with partial corpectomy at C4. Postoperatively, the patient reported left-sided tongue swelling and difficulty moving his tongue to the left. At 2-week follow-up, deformation was noted on the left side of the tongue. The patient was subsequently referred to an otolaryngologist where he was diagnosed with HNP. At 6 weeks follow-up, flaccidity was noted on the left side of the tongue with continued difficulty moving the tongue to the left, dysphagia, and dysarthria. At 5 months follow-up, difficulties with eating and speaking persisted. At 1 year follow-up, the patient demonstrated continued difficulty moving the tongue on the left side of the mouth and left-sided tongue deviation and deformation were more pronounced.

Discussion:
Our case report is unique because KFS is a rare congenital spine deformity which has been associated with atypical anatomy of the neck. While the etiology is unknown, we suspect the nerve palsy resulted from compression of the hypoglossal nerve during retraction and/or tracheal intubation and may be related to anatomical variations caused by the Klippel-Feil deformity.

Impact:
HNP following cervical spine surgery is a substantial impairment for affected patients and care should be taken when placing endotracheal tubes and retracting anatomical structures of the neck to minimize the risk of this complication.

Funding:
None.

SESSION 3 BREAKOUT ROOM 15

HOME BASED TELE-EXERCISE STUDY FOR PEOPLE WITH CHRONIC NEUROLOGICAL IMPAIRMENTS

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Introduction and rationale:
Exercise is vital to staying well and preventing secondary complications in people with chronic neurological impairments (CNI). Appropriate exercise is often inaccessible to this population and effectiveness of virtual programs has seldom been studied. The purpose of the study was to investigate the effects of a 12-week seated virtual exercise program on heart rate, recovery, fatigue, pain, motivation, enjoyment and quality of life in people with CNI.

Methods:
60 participants (49 Multiple Sclerosis, 4 Spinal Cord Injury, 3 Friedreich's Ataxia, 2 Transverse Myelitis, 1 Neuromyelitis Optica, 1 Myotonic Dystrophy) randomized into either a live or pre-recorded group were analyzed. The live group exercised with an instructor via zoom while the pre-recoded group exercised at their chosen time using pre-recorded videos. Heart rate during exercise/recovery, fatigue, motivation, level of pain and exertion were assessed before/after each session. Physical well-being, enjoyment of physical activity, motivation and quality of life were assessed at baseline, midpoint, end of study, and one-month post-study. Adverse events, medication changes and physical activity were tracked throughout. Within-group and between-group comparison were performed using Wilcoxon Rank-Sum and Kruskal Wallis tests respectively. Results: 42 participants completed all exercise sessions (27 live, 15 pre-recorded). Within-group comparison: The live group showed significant improvement in enjoyment of physical activity ($p<0.0001$) and physical health ($p=0.02$) over 12 weeks. Changes in physical well-being, motivation and other components of quality of life were not statistically significant ($p>0.05$). The pre-recorded group showed significant improvement in motivation over 12 weeks ($p=0.03$). Improvements in physical well-being, enjoyment of physical activity and quality of life were not statistically significant.

Conclusion:
Virtual seated exercise is feasible and shown to improve physical health, well-being, motivation, enjoyment and quality of life over 12 weeks in live and pre-recorded formats for people with CNI. Trial Registration/funding: NCT04564495. Registered on September 25, 2020. Funded by Sabrina Cohen Foundation and funds allotted to Dr. Kathleen Friel, Burke Neurological Institute.

SESSION 4 BREAKOUT ROOM 1

EFFECTS OF MEDITERRANEAN AND WESTERN DIETARY PATTERNS ON MENTAL DISTRESS AND PERCEIVED STRESS

*Katerina Nagorny, *Ushima Chowdhury, *Lexis Rosenberg, *Megan Welch, *Gerard Dempsey, *Michael Colabelli, *Tharsana Kumarasivam, *Lindsey Moser, & Lina Begdache; Binghamton Mentors for the Interdisciplinary Nutrition and Distress Study (BMINDS), Department of Health and Wellness Studies, Decker College of Nursing and Health Sciences, Binghamton University, Binghamton, NY 13902

Introduction:
The Mediterranean diet is primarily composed of vegetables, whole grains, seafood, and legumes, while the Western diet mainly consists of processed foods, such as fast food and refined grains. Previous studies have found the Mediterranean diet to be associated with lower rates of anxiety and depression, and ultra-processed foods to be associated with higher odds of depression. However, few studies have investigated the effect of individual dietary components on perceived stress. Our study investigates how Mediterranean and Western dietary components affect adults' mental distress and perceived stress.

Methods: To assess how the components of each diet affect mental and perceived stress, an anonymous online survey was distributed to adults via social media and email. The survey contained demographic questions and the Food-Mood Questionnaire, Kessler-6 Scale, and the Perceived Stress Scale. 1591 responses were included in the data set. Data was analyzed using Spearman's Rho correlation and Principal Component Analysis in SPSS version 25.0.

Results: The results indicate significant negative correlations between mental distress and perceived stress with Mediterranean components, such as whole grains (ρ=-0.094, ρ=-0.073), seafood (ρ=-0.133, ρ=-0.111), and beans (ρ=-0.070, ρ=-0.090). Beef/lamb are also negatively correlated with mental distress (ρ=-.085). However, there are significant positive correlations between mental distress and perceived stress and the Western diet, including fast food (ρ=0205, ρ=0.186) and high glycemic food (ρ=0.055, ρ=0.051).

Discussion:
Fast food constitutes a pro-inflammatory diet, which is associated with an increased risk for depression. Inflammation aids in the development of depression through oxidative stress. Therefore, consumption of low nutrient foods in the Western diet may activate inflammatory pathways and increase the risk for mental health issues.

SESSION 4 BREAKOUT ROOM 2

EFFECTS OF CAFFEINE, EXERCISE, AND BREAKFAST ON MENTAL DISTRESS AND PERCEIVED STRESS

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Introduction:
Caffeine, a widely used stimulant, has been shown to elevate stress levels, thus having a negative effect on adolescent mental distress and overall well-being. Contrary to caffeine, exercise and breakfast have been proven to have the ability to lower stress levels. Our study aims to investigate how lifestyle choices such as caffeine consumption, breakfast, and exercise have a compounding effect on the body and affect one's ability to handle life stressors.

Methods:
To assess the effect of caffeine, exercise, and breakfast with mental distress and perceived stress, an anonymous online survey was administered to 1591 students 18 years old and older through social media and email. The surveys used were the Food-Mood Questionnaire, Kessler-6, and Perceived Stress Scale. Students were asked demographic questions as well as questions regarding their personal nutrition and mental distress and perceived stress. Data was analyzed using SPSS version 25.0.

Results:
The results show a clear positive correlation between caffeine and both mental and perceived stress(0.064** p=0.01, .008**, p=0.008). Subjects who consumed caffeine had a higher chance of feeling nervous, stressed, restless, and fidgety. On the other hand, there was a clear negative correlation between eating breakfast and mental distress (-.266**,p=0.0). There was also a negative correlation between exercise and perceived stress (-.209**,p =0.00).

Discussion:
Our correlation results revealed that lack of exercise, skipping breakfast, and drinking caffeinated beverages strongly associated with mental distress and perceived stress patterns. People who consume caffeine, skip breakfast, and do not exercise have a greater risk of experiencing symptoms of mental distress or perceived stress. Individuals should consider daily breakfast and exercise while lowering caffeine consumption in order to manage stress levels and improve their overall wellbeing.

SESSION 4 BREAKOUT ROOM 3

INVESTIGATING REPORTED ASSOCIATIONS BETWEEN HUMAN MITOCHONDRIAL DISEASES AND MTDNA HAPLOGROUPS

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Introduction:
Human Mitochondrial DNA, or mtDNA, is a circular genome that has a mutation rate that is 10-17 times higher than nuclear DNA. These mutations could lead to a variety of diseases including Leber Hereditary Optic Neuropathy and Leigh syndrome. MtDNA is also used in human population genetics by focusing on the phylogenetic relationship between the major groups of closely related mtDNA lineages known as haplogroups, each defined by a set of mtDNAmutations. Previous studies have linked some mtDNA haplogroups to diseases, but few have demonstrated a mechanism by which the mutations defining said haplogroups may impact health and disease.

Methodology:
Data was compiled from 138 peer-reviewed articles to create a list of 287 mitochondrial mutations, and 346 possibly associated haplogroups, along with their associated diseases, where applicable. After that, ClinVar, Genbank and Mitomap Allele Search were used to cross reference the mutations and determine pathogenicity. Additionally, mutations within the control region of the mitochondrial genome were also analyzed to determine whether this region of the genome has the capacity to affect the phenotype of an individual or be pathogenic.

Results:
The data was consolidated to only 11 haplogroups having more than one possible pathogenic mutation. There were 17 mutations associated with the mutations and by cross checking, only 2 mutations (G11778A and T12338C) were found to have pathogenic properties. These mutations were associated with 7 subhaplogroups. There were discrepancies between articles and ClinVar when it came to the geographic region of the haplogroups. This could suggest a data bias or inadequate sample sizes from certain populations.

Conclusion:
This research can help better understand the possible associations between human mitochondrial lineages and disease. This could lead to advances in the healthcare system, by bringing other disease options to the forefront. In turn, this could lead to new experimental studies for preventative measures or treatments for diseases.

This research project and the First-year Research Immersion (FRI) Program is supported through funding via Binghamton University’s Provost Office.

SESSION 4 BREAKOUT ROOM 4

A RARE CASE OF DUODENAL LEIOMYOMA

GOWTHAMI RAMAR MD, MINHAZ AHMAD MD, NAZIF CHOWDHURY MD, United Health Services- Wilson Medical Center, Johnson City, New York.

Introduction:
Neoplasms of the small bowel are rare and comprise only 1-5% of all gastrointestinal neoplasms. Leiomyomas are most frequently seen in the jejunum followed by the ileum and lastly the duodenum. Some common clinical presentations of duodenal leiomyomas are intermittent abdominal pain, constipation, nausea, vomiting, anemia. We are presenting a rare case of duodenal leiomyoma that might have contributed to anemia in our patient.

Case description:
A 70-year-old female presented to the hospital with complaints of fatigue and weakness. Laboratory evaluation showed iron deficiency anemia with hemoglobin 7.5g/dl, hematocrit 25.4%. The patient does report an episode of black tarry stool about a week before presentation. Patient received one packed red blood cell transfusion and decision was made to perform upper gastrointestinal endoscopy (EGD) to evaluate anemia. EGD revealed non erosive gastritis and gastric erosions without any stigmata of current or recent bleeding. A single large pedunculate polyp was found in the first portion of the duodenum extending into the second portion of the duodenum. Biopsy from the polyp revealed submucosal leiomyoma without any evidence of dysphasia or malignancy. Colonoscopy was performed the next day which revealed significant diverticulosis and non-bleeding internal hemorrhoids. The patient remained hemodynamically stable and was discharged home the next day. The patient presented about a month later with iron deficiency anemia again. Repeat EGD and colonoscopy performed this time showed no obvious source of bleeding. We also performed a pill cam study, which also came back negative for bleeding.

Discussion:
Definitive diagnosis of leiomyoma can be made only on biopsy. Histopathology plays a very important role in determining the malignant potential of the tumor. Prognosis for well differentiated tumors are favorable. Our patient described in the case report had a benign leiomyoma that could have contributed to anemia as no obvious source of bleeding could be found even after extensive workup.

SESSION 4 BREAKOUT ROOM 5

HETROPHILE ANTIBODY CONFOUNDING NSTEMI?

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Introduction:
One of the mainstays of diagnosing acute coronary syndrome is the presence of cardiac enzymes like troponins I and T in addition to ischemic electrocardiogram changes, wall motion abnormalities on echocardiogram, and physical presentation. These parameters are often used to decide the course of treatment whether it be coronary angiography, thrombolytic therapy, and/or surgery. In less than 0.05% of the population, the presence of heterophile antibodies can lead to false positives for troponin.

Case Description:
A 33-year-old pregnant female with no cardiac history presented to the Emergency Room with sudden, pleuritic chest pain accompanied by dyspnea. The patient was hemodynamically stable and was in no acute distress. Initial lab work was remarkable for an elevated troponin level of 4.230 ng/ml, ESR of 50 mm/hr, and CRP of 5.1 mg/dl. Imaging with chest X-ray and CTA showed no acute pathology. In addition, an electrocardiogram showed normal sinus rhythm with no ST changes and echocardiogram showed normal systolic and diastolic function. Of note, the patient received the Moderna COVID-19 booster three days ago. There was no personal or familial history of coronary artery disease or sudden cardiac death. There was also no evidence or concern for preeclampsia.With the elevated troponins and pleuritic chest pain, a preliminary diagnosis of viral myocarditis with recent COVID-19 booster administration was suspected. She was admitted to the internal medicine service for observation.

Conclusion:
Heterophile antibodies are a rare but recognized cause of false troponin elevation due to cross reactivity in immunoassays. Often prevalent in multiparous women and patients working in proximity to animal blood products. This can unfortunately lead to unnecessary and invasive cardiac procedures increasing morbidity. When clinical presentation does not correlate with laboratory and imaging results, the presence of heterophile antibodies should be considered.

SESSION 4 BREAKOUT ROOM 6

PACEMAKER INSERTION AVERTED BY HEMODIALYSIS!

Authors: Altif Muneeb, Amit Bansal, Owais Ahmed
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Abstract:
Lithium is an important mood stabilizer medication and has various side effects. One of the rare but potentially lethal side effects is arrhythmias. Here we present a case of lithium-induced sinus node dysfunction with urgent hemodialysis resulting in complete resolution of electrocardiographic changes.

Clinical course/summary:
65 years old female with a past medical history of Bipolar disorder, Hypertension, and morbid obesity was admitted to the hospital with altered mental status. Her home medications were Lithium 300 mg BID, Bupropion SR 100 mg BID, Lisinopril 20 mg daily, and pravastatin 40 mg daily. She was experiencing generalized tremors, lethargy, and difficulty in ambulation for one week. Eventually, she became unresponsive. Her initial vitals were: heart rate 30/minute, blood pressure 60/34, respiratory rate 26/min, SpO2 100% on room air. She was started on dopamine and norepinephrine infusion. A CT angiogram of the head and neck was unremarkable. Lab work showed WBC count 19.9 x 10^3/uL (4.0 - 10.5 x 10^3/uL, creatinine 1.6 mg/dl (0.5 - 1.0 mg/dl) baseline creatinine 0.9 mg/dl, BUN 29 mg/dl (7 - 23 mg/dl) , potassium 6.3 mmol/L (3.5 - 5.3 mmol/L), lithium levels 2.5 mmol/L (Normal range 0.6 - 1.2 mmol/L), serum lactate 2.1 mmol/L (0.7 - 2.0 mmol/L). No acute disease was noted on the chest x-ray. Initial EKG showed junctional rhythm with premature atrial contractions, and heart rate 60/min. No significant ST or T wave changes were present. Nephrology recommended urgent hemodialysis. Post hemodialysis she was in sinus rhythm with complete resolution of sinus node dysfunction and significant improvement in mental status.

Conclusion:
Lithium toxicity is common in patients as it has a narrow therapeutic index. For this reason, lithium levels need to be monitored closely. Although cardiac dysrhythmias are rare, lithium toxicity can cause repolarization abnormalities, sinus node dysfunction, or an unmasked or modulated Brugada pattern. Physicians should be aware of these electrocardiographic abnormalities for prompt treatment.

SESSION 4 BREAKOUT ROOM 7

A UNIQUE PRESENTATION OF NON-SMALL CELL LUNG CANCER WITH WIDESPREAD PULMONARY NODULES

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34-year-old male, with a 10-pack-year smoking history, presented to ED for altered mentation. Patient was alert, oriented, but could not recall reason for visit. Bite marks were noted on tongue. There were no obvious neurological deficits. Lungs were clear to auscultation. Laboratory workup showed elevated creatinine-kinase. Patient was treated with levetiracetam for new-onset seizure. CT-brain showed small hyperdense lesions in bilateral parietal and left frontal lobes, and right caudate head. Electroencephalogram was unremarkable. CT-chest showed bilateral multilobar lesions, and mediastinal and hilar lymphadenopathy. CT-cervical spine showed diffuse osteolytic and osteoblastic lesions, C7-T4 compression fractures. Findings were suggestive of a possible testicular cancer; however, a testicular ultrasound was unremarkable for testicular neoplasm. Subsequently, iliac bone marrow aspiration and biopsy were performed. Pathology revealed metastatic adenocarcinoma from a lung primary, likely NSCLC. Patient received palliative whole-brain radiation over 10 sessions, and memantine. He was treated with Osimertinib and Denosumab. On 12-month follow-up, there was no recurrence of seizure. CT-chest revealed improvement in disease and in quality of life (QOL). Our case presented a diagnostic challenge due to atypical presentation mimicking testicular cancer. NSCLC patients most commonly present with pulmonary symptoms, or with symptoms caused by metastases such as seizure in our patient. Generally, NSCLC appears as a mass-like opacity on chest imaging. However, our patient presented with widespread bilateral nodular opacities mimicking testicular cancer in a young male. Only on biopsy from a metastatic lesion was diagnosis found to be NSCLC. Early initiation of palliative whole-brain radiation therapy and novel targeted therapies improves QOL and survival outcomes as observed here. A high clinical suspicion for primary NSCLC in a patient presenting with brain metastases and multilobar lung nodules may ensure timely diagnosis and appropriate management. Instead of a typical solitary lung mass, NSCLC may present as widespread bilateral nodules. In young patients, lung cancer may be missed as a differential. The clinician should practice vigilance when encountering a patient with seizures and abnormal multiple lung nodules. Proper clinical assessment and timely diagnostic work-up is critical. Our patient had a reasonably favorable clinical outcome and improved QOL with whole brain radiation and Osimertinib.

SESSION 4 BREAKOUT ROOM 8

OBSCURE GASTROINTESTINAL BLEEDING ASSOCIATED WITH PYCNOGENOL (PINE BARK EXTRACT) USE

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Introduction:

Recurrent gastrointestinal (GI) bleeding without identifiable source on upper Esophagogastroduodenoscopy (EGD) or colonoscopy is termed obscure gastrointestinal Bleeding (OGIB).We present a case of an acute persistent lower GI bleeding associated with consumption of Pycnogenol, also known as French maritime pine (Pinus pinaster) bark extract. This was a 65-year-old male who presented with hematochezia and hemoglobin of 6.4g/dl. Upper EGD and colonoscopy showed no obvious source of bleeding. A CT Angiogram abdomen/pelvis with contrast and a nuclear medicine gastrointestinal bleeding scan showed no evidence of an active gastrointestinal bleeding site. Laparoscopy, diagnostic enterotomy with intraoperative endoscopy and colonoscopy were unrevealing as well. Further inquiries into his history revealed the persistent GI bleeding was secondary to ingestion of the herbal supplement Pycnogenol. Our case outlines the importance of detailed history, physical examination, review of medications including herbal supplements as a cause of unexplained GI bleeding.

Discussion:

Pycnogenol, a commercially available extract of the bark of the French Pinus pinaster Maritime pine tree, has been marketed as a food supplement and herbal remedy that has Preventative and/or therapeutic effects for varying chronic conditions that relate to oxidative stress. Pycnogenol was ranked among the top 30 selling herbal dietary supplements in the United States in mainstream retail outlets. Review of the literature found trials of Pycnogenol use described for treatment of thrombosis, diabetes, hypertension, asthma, ADHD, endometriosis, and osteoarthritis, among other conditions. Pycnogenol has been reported to have vasorelaxant activity, inhibitory effects on angiotensin-converting enzyme activity, and modulatory effects on nitric oxide metabolism as well. In our practice, we have noted increased use, in recent days, of herbal supplements and multivitamins, including Pycnogenol, reportedly to boost immune response during the COVID pandemic. Additional research is needed to study the possible interactions of Pycnogenol to prevent potential complications like persistent and significant gastrointestinal bleeding

SESSION 4 BREAKOUT ROOM 9

A SINGLE CENTERED RETROSPECTIVE REVIEW OF COLONOSCOPY RESULTS IN PATIENTS WITH POSITIVE COLOGUARD

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Introduction:
Colorectal cancer (CRC) is the most common form of gastrointestinal cancer and is the third leading cause of cancer deaths in US [1]. At this time, effective screening tools used for colon adenomas and cancer detection are fecal occult blood test (FOBT), fecal immunochemical tests (FIT), stool DNA test (Cologuard) and optical colonoscopy [2]. A limitation of FOBT and FIT tests are that they carry low positive predictive values [3]. Cologuard is indicated in colorectal cancer screening in "average risk" adults performed in three-year intervals. Average risk is defined as routine screening without prior history of colon polyps/cancer or without family history of colon polyps/cancer. [4]. Currently, Cologuard is considered 92 % sensitive and 87% specific in colon cancer detection in the average risk population [4]. In our retrospective study, we will be comparing the results of positive Cologuard with subsequent colonoscopy findings. A secondary endpoint will be assessing the appropriate use of Cologuard in patients with positive results in our study population. [5].

Methods:
1.288 patients with positive Cologuard test were reviewed and compared with results of follow up colonoscopies. 2. The relevant information was transcribed into an excel file. Information including, but not limited to, MRN, Age, Height, Weight, BMI, Medication, Family History, results and date of positive Cologuard, results and date of follow up colonoscopies, was assessed. 3. Patients were identified utilizing their medical record number through the ProVation software. Prior to analysis, deidentification of patient's data was performed.

Results: 1. Out of 288 patients who tested positive on Cologuard screening, 10.4% patients (30/288) were excluded as they were noted to have undergone an inappropriate Cologuard test, either because of prior history of colon polyps (10/30, 33.3%) or family history of colonic polyps/cancer (20/30, 66.7%). 24.3% patients (70/288) were excluded because of family history of unknown cancer (58/70, 82.9%) and prior history of colonoscopy with unknown results (12/70, 17.1%). 2. Out of the remaining 65.3% patients (188/288), 6.4% patients (12/188) were excluded because of poor preparation. 3. 93.6% patients (176/188) had appropriate preparation. Appropriate preparation was categorized as excellent (74/188, 39.4%), good (72/188, 38.3%) and fair (30/188, 16%). These patients were further evaluated with their subsequent colonoscopies. a. 20.2% (35/176) patients had negative colonoscopies for polyps/CRC. Out of this, 91.4% (32/35) had additional findings of diverticulosis, hemorrhoids and 8.6% (3/35) has no additional findings. b. 79.8% (138/176) had positive colonoscopies. Of these patients, 52.2 % (72/138) had nonadvanced polyps, 13.8 % (19/138) had sessile serrated polyps and 34.1 % (47/138) had advanced polyps.

Discussion:
1. In our patient population, 10.7 % (30/288) patients underwent inappropriate Cologuard testing. Providers need to use test only screening average risk population. 2. 65.3% (188/288) patients underwent appropriate Cologuard testing with: a) 6.4% (12/188) patients removed because of poor prep. b) 20.2 % (35/176) patients had normal colonoscopy. c) 79.8% (138/176) patients resulting in abnormal colonoscopy with 6.5% (9/138) patients were diagnosed with colorectal cancer.

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SESSION 4 BREAKOUT ROOM 10

RESCUE SUCTION MECHANICAL THROMBECTOMY OF MEDIUM-SMALL VESSEL OCCLUSION IN A PEDIATRIC PATIENT PRESENTED WITH ACUTE ISCHEMIC STROKE

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Introduction:
Endovascular mechanical thrombectomy (MT) has dramatically decreased the mortality and morbidity associated with acute ischemic stroke (AIS) in adults. A similar benefit is seen in pediatric patients, but a due to a lack of documentation in outcomes and lack of universal guidelines on procedures, there a exists a need for greater elucidation of pediatric thrombectomy approach and outcomes. Unfortunately, MT is only performed on large vessel occlusion (LVO). Therefore, AIS with medium and small vessel occlusion (MSVO) with disabling neurological deficit not yet have any clear options. We are presenting a pediatric patient who presented with AIS due to the occlusion of the right anterior cerebral artery (ACA) A2-A3 junction thrombus under successful suction MT resulting in complete recovery. Methods: Case report

Results:
A 17-year-old Caucasian female with a known hypercoagulable state due to 4G/5G PAI-1 activity on Xarelto and history of several previous strokes presented with NIH score of 7 and baseline mRS score of 2. CT angiography was inconclusive, and patient was taken to digital subtraction angiography, which identifying a right A2-A3 junction thrombosis.

Procedure:
6 French guiding sheath was placed in the right internal carotid artery. A 3 max intermediate catheter alone with velocity microcatheter and synchro 14 soft microwire were used to reach right ACA A2-A3 junction. Direct suction through the 3 max catheter resulting in TICI 3 revascularization was achieved, and patient improved to NIH score of 4 immediate post operatively. Patient further improved with targeted physical therapy and was discharged home with NIHSS 0 and modified ranking of 2. Direct anticoagulation was switched to warfarin with INR goals of 2-3.

Conclusion:
Endovascular aspiration mechanical thrombectomy of MSVO is feasible in pediatric patient presenting with AIS and associated with good functional outcome. Additionally, when acute ongoing neurological deficit is present and CTA is inconclusive, a digital subtraction angiography is deemed needed to identify MSVO as the yields of CTA diminishes significantly beyond LVO. Further studies are required.

SESSION 4 BREAKOUT ROOM 11

PSYCHIATRIC SEQUELAE OF THE COVID-19 INFECTION IN ADOLESCENTS

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Introduction:
There is extensive research on the negative effects of the COVID-19 pandemic on mental health due to lockdowns and quarantine, but there is significantly less research on the effects of the disease itself on mental health. Based on existing literature, the vulnerable youth population has been underrepresented regarding long-term mental health outcomes from the COVID-19 infection. In this study, we investigate the psychiatric sequelae of the COVID-19 infection on adolescents.

Methods: We used de-identified medical records from the TriNetX Research Network to examine the association of the COVID-19 infection on the subsequent diagnosis of psychiatric disorders in a total of 3.8 million adolescents. The COVID-19 patients were identified as either having a COVID-19 diagnostic code (U07.1 or U07.2), pneumonia due to COVID-19 (J12.82), or a positive antigen or IgM test during age 13 to 21 since Jan 20, 2020. Patients without COVID-19 were defined as those who had similar healthcare visits during age 13 to 21 during the same time period, but never had any of the above diagnostic codes, or any positive antigen/antibody tests, or history of COVID-19 infections (including post COVID-19 condition, U09). We excluded those with known psychiatric diagnoses (ICD-10 F01-F99) prior to contracting COVID-19, or prior to their healthcare visits during the pandemic. We used Kaplan-Meier survival analysis to compare the cumulative incidence of new psychiatric diagnoses between the adolescents who had and did not have COVID-19.

Results:
Comparing with 2.8 million adolescents those who never had COVID-19, we found that adolescent COVID-19 patients (N = 157,368) had a significant increased risk for developing mental health problems (diagnostic codes F01-F99; hazard ratios (HR) 4.25, 95%CI: 4.06, 4.44). The highest HRs were observed for intellectual disabilities, anxiety, developmental and mood disorders. In addition, we also observed significantly high HRs for ADHD (HR 5.25, 95%CI: 4.53, 6.07), conduct disorder, alcohol use disorder.

Conclusion: The COVID-19 infection poses a significant risk for adolescents to develop psychiatric disorders after recovering from the infection, highlighting the urgent need of mental health services for those at-risk youth. Future research is needed to help understand the pathophysiology underlying the association of COVID-19 infections with psychiatric illnesses.

SESSION 4 BREAKOUT ROOM 12

CANCER RELATED FINANCIAL TOXICITY DURING THE COVID-19 PANDEMIC

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Introduction:
Research indicates that the COVID-19 pandemic has placed significant financial strain on many individuals, especially those with costly medical conditions such as cancer.

Methods:
We aimed to investigate the impact of COVID-19 on financial toxicity among cancer patients. A US based cross sectional study was conducted on 4,111 individuals with a history of cancer using data from the 2020 year of the National Health Interview Survey. Using multivariable logistic regression analysis, we assessed the associations between several clinical and sociodemographic covariates with the primary endpoints of being unable to pay medical bills currently and having problems paying medical bills over the last 12 months.

Results:
Respondents who reported being unable to medical pay bills and having problems paying medical bills over the last 12 months were younger on average than those who did not (69.1 vs 61.5, $p<0.001$ and 69.7 vs 66.4, $p<0.001$, respectively). Upon multivariable logistic regression analysis, older age and increased annual income were inversely correlated with the likelihood of being unable to pay medical bills, while ever receiving a COVID-19 test, residing in the South or Midwest regions (compared to West), and living in a large fringe, or medium/small metro (compared to non-metro) were associated with increased likelihood. Additionally, ever receiving a COVID-19 test increased the likelihood of being unable to pay medical bills over the last 12 months whereas older age and annual income of $100,000 or more decreased the likelihood.

Conclusions:
These results suggest that numerous sociodemographic and clinical variables have influenced the ability of cancer patients to manage treatment related expenses during the COVID-19 pandemic. Awareness of financial disparities among cancer patients and the impact of the pandemic on patients' ability to afford care should be raised.

SESSION 4 BREAKOUT ROOM 13

COVID-19 AND MENTAL HEALTH DISORDERS IN CHILDREN AND ADULTS: PROGRESS TOWARDS A SYSTEMATIC REVIEW

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Introduction:
The link between COVID-19 and mental health has received increased attention. However, many of the literature reviews that examine this are focused on the psychosocial effects of isolation during the pandemic. There are far fewer review articles examining the psychiatric and behavioral consequences of infection and illness due to the SARS-CoV-2 virus. Brain imaging studies have shown that COVID-19 leaves structural changes and functional disruptions in the brain even after recovering from the infection, suggesting increased risks of neurological and psychiatric conditions. The goal of this review is to compile recent work on the link between SARS-CoV-2 infection and mental health disorders, and to determine the extent of their relationship in children and adolescents.

Methods:
This review uses a PubMed search query, and it leverages Boolean operators to include work published after 11/01/2019 that is relevant to COVID-19, SARS-CoV-2 infection, and mental health. Works with keywords “lockdown” or “shutdown” in their title are excluded in the initial search to decrease the number of results that are not specific to infection. Similar search strategies are being developed for Web of Science, bioRxiv, and medRxiv. We also plan to determine the feasibility of a meta-analysis.

Tentative Results:
3,384 studies were identified by our most recent search strategy using PubMed. The search and review process is currently in progress, but initial findings from at least 16 papers discussed the relationship between SARS-CoV-2 infection and the following symptoms or disorders: anxiety disorders, insomnia, dementia, psychotic-like experiences, difficulty concentrating, depression, and interpersonal problems.

Preliminary Conclusions and Future Work:
Initial findings suggest there is an increased risk of mental health disorders following SARS-CoV-2 infection. Our review will be one of the first to systematically determine the relationship of COVID-19 and mental health outcomes in children and adolescents. Our work will provide important evidence to support future research in this area and help inform the public policy to better serve the at-risk youth.