Conclusion: Male victims of copperhead snake envenomation demonstrate slightly better recovery than females during the first 14 days after treatment, but response to Fab antivenom overall is similar across all subgroups studied.

337 Cannabinoid Hyperemesis Syndrome: 3-Year Practice Patterns

Elkin Kenneth, Tai Peter, Winkel Jacob, Kulkarni Megha, Sadler Dominic, Truong Nguyen, Wilson Carson, Paxton James/Wayne State University School of Medicine, Grosse Pointe, MI; Sinai Grace Hospital, Detroit, MI; Wayne State, Detroit, MI; Detroit Receiving Hospital, Detroit, MI

Study Objectives: Cannabis is a widely used drug gaining popularity in both recreational and medical fields. Cannabinoid hyperemesis syndrome (CHS) is an increasingly recognized condition characterized by cyclical episodes of vomiting and abdominal pain. The present study sought to create the largest case series of CHS patients to date, and to identify changes in the prevalence of CHS as well as local practice patterns with a specific interest in anti-emetic usage patterns and resource utilization.

Methods: A retrospective chart review of adult patient encounters with a chief complaint of vomiting, nausea or abdominal pain was completed for a 3-year period from 01/01/2014 to 12/31/2016. Patients were enrolled from the Sinai Grace Emergency Department in Detroit, Michigan. Adult patients greater than 18 years of age were enrolled if any one of three criteria were met. The criteria were largely adopted from prior research and the Rome IV diagnostic criteria for CHS: 1) ED Diagnosis of CHS; 2) ED diagnosis of cyclical vomiting syndrome with a documented history of regular, greater than once per week usage of cannabis products ; 3) A minimum of three visits in a 1-year period AND two visits in a 6-month period for N/V of unexplained etiology AND a documented history of regular cannabis abuse. Patients were excluded on the basis of pregnancy, in-hospital mortality, ICU or trauma services admission. Social and patient characteristic data were obtained from enrolled patients with a specific interest in the anti-emetic and pain medications utilized.

Results: The present study demonstrated that the prevalence of CHS in our community has not changed significantly from 2014-2016: CHS comprised 0.103%, 0.084% and 0.089% of all ED visits in 2014, 2015 and 2016, respectively. 290 charts were enrolled into our final case series. It was found that patients with CHS may exhibit a large health care utilization burden in averaging 10.9 ED visits in a two-year period for nausea or abdominal pain symptoms. Approximately 75% of the enrolled CHS patient visits required laboratory testing, 10% obtained computed tomography scans, and 33% lead to admission. Enrolled patients tended to have unremarkable electrolyte and laboratory results and averaged 31 years old without any sex distribution. Ondansetron is the most prevalent medication used in CHS, and no significant difference in medication usage was seen in the admitted patients versus the discharged patients. However, it was observed that the administration of a single dose of Ondansetron was associated with discharge from the ED.

Conclusion: The prevalence of CHS within our population has not significantly changed, despite government data indicating increased marijuana card usage. CHS inflicts a large burden on the health care system. Further research to characterize this disease and its treatment may reduce wasteful health care utilization. Ondansetron remains the most utilized anti-emetic in CHS patients, and patients who respond to one dose of ondansetron are more likely to be discharged than those receiving no dosages or requiring more than one dosage. With increasing national decriminalization of marijuana, this research provides a 3-year window into CHS pre-legalization for future comparison. It is expected that the present study will provide a foundation for further research to guide future clinical trials into anti-emetic therapy for CHS.

338 Improved Trauma Survivor Phenotypes Are Critical for Better Biomarkers, Prediction Tools, and Treatments: Initial Results From the AURORA study

McLean SA, An X, House S, Beaudoin FL, Musey P, Hendry P, Jones CW, Lewandowski C, Storrow A; The AURORA Study Group/University of North Carolina School of Medicine, Chapel Hill, NC; Washington University School of Medicine, St. Louis, MO; The Alpert Medical School of Brown University, Providence, RI; Indiana University School of Medicine, Indianapolis, IN; University of Florida College of Medicine-Jacksonville, Jacksonville, FL; Cooper Medical School of Rowan University, Camden, NJ; Henry Ford Hospital, Detroit, MI; Vanderbilt University Medical Center, Nashville, TN

Study Objectives: Adverse posttraumatic neuropsychiatric sequelae (APNS) are common among civilian trauma survivors and military veterans. APNS, as traditionally classified, include posttraumatic stress, post-concussion syndrome, depression, and regional or widespread pain. These traditional classifications artificially fragment APNS into siloed, syndromic diagnoses unmoored to discrete components of brain functioning. These traditional classifications are typically studied in isolation, and do not accurately reflect actual posttraumatic neuropsychiatric phenotypes. Most trauma survivors experience complex patterns of overlapping/co-occurring symptoms across multiple traditional classifications, and increasing evidence indicates that co-occurring symptoms can share an interwoven neurobiological substrate. Determining more discrete, homogenous APNS outcomes over time may improve the ability to index APNS to brain function, and categorizing individuals across these outcomes may provide more holistic, accurate phenotyping. Developing such phenotypes is a goal of the ongoing AURORA study, a ~40 million dollar effort funded by NIH, the DoD, and foundation and industry partners.

Methods: 5,000 trauma survivors presenting to 29 EDs for care are enrolled. Core self-report posttraumatic phenotype trajectories are developed using data obtained via serial administration of brief smartphone-based self-report surveys. Biomarkers for these outcomes are identified via serial assessments of neurocognitive, physiologic, digital phenotyping, psychophysical, neuroimaging, and genomic domains. After derivation and validation, these biomarkers will be integrated into outcome phenotype definitions. In the present abstract, the development of core self-report outcomes in the immediate aftermath of trauma is described. The Mindstrong™ App is used to assess symptom indicators for homogenous outcomes across the APNS spectrum (sleep, pain, loss, nightmares, avoidance, re-experiencing, anxiety, hyperarousal, cognition, and somatic). Each indicator group is assessed 6 times during the initial 8 weeks after trauma. Data from an initial study subsample experiencing a common trauma exposure (MVC, n=837) were used to develop measurement models and latent growth curves across timepoints for each outcome. Initial multidimensional outcome groups were developed using latent profile analyses.

Results: Construct measurement models provided a good fit to the data (eg, pain CFI 0.99, Loss CFI 0.97). Latent growth curves were developed and mixture model classes created for display purposes (Figure 1). Multidimensional outcomes were identified/selected based on relative model fit and clinical utility; non-recovered groups had markedly different inter-construct profiles.

Conclusion: New phenotyping categorizations such as those resulting from the AURORA study have the potential to advance the evaluation and treatment of trauma survivors.

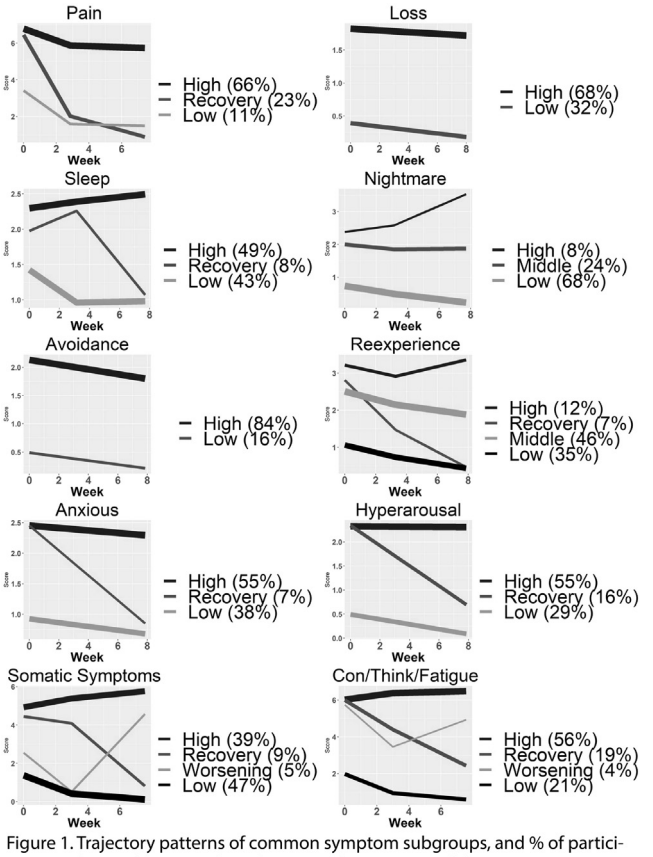

Figure 1. Trajectory patterns of common symptom subgroups, and % of participants within each pattern, based on growth mixture models.