



Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Elsevier hereby grants permission to make all its COVID-19-related research that is available on the COVID-19 resource centre - including this research content - immediately available in PubMed Central and other publicly funded repositories, such as the WHO COVID database with rights for unrestricted research re-use and analyses in any form or by any means with acknowledgement of the original source. These permissions are granted for free by Elsevier for as long as the COVID-19 resource centre remains active.

321 Not So Benign Paroxysmal Positional Vertigo in the Emergency Department



Moaddel V, Tapia A, Burkard D, Singh M, Peterson T, Pillay Y, Jones J, Sapp T/Michigan State University College of Human Medicine, Grand Rapids, Grand Rapids, Michigan, US

Study Objectives: Benign paroxysmal positional vertigo (BPPV) is the most common cause of vertigo. Many affected patients have mild to moderate symptoms and are easily treated as outpatients. In others, BPPV can have a profound effect on function, independence, and quality of life. The purpose of this study is to determine hospital admission rates of patients with BPPV with a focus on diagnostics and treatment.

Methods: This was a retrospective cohort analysis of consecutive adult patients with an ED diagnosis of BPPV. Patients were seen at seven emergency departments (EDs) over an 8-month study period. Data collected included demographics, clinical features, diagnostic testing, and treatment. Patients discharged from the ED were compared to those admitted to the hospital. Chi-squared and t-tests were used to compare the two groups across key demographic and outcome variables. A random sample of 10% of the charts were reviewed to determine inter-rater reliability.

Results: A total of 394 adult ED patients met the inclusion criteria; 66 (16.8%) were admitted and 328 (83.2%) were discharged home. Admitted patients were less likely to have positional testing performed in the ED and were more likely to undergo computed tomography (CT) of the head (80.6% vs. 41.7%, $p < 0.001$). Vestibular suppressant drugs were given to 95.0% of all BPPV patients in the ED while canalith repositioning maneuvers were used in 3.6%. Patients were admitted because of difficulty with gait and balance (77.3%), persistent vomiting (19.7%), and/or waiting for magnetic resonance imaging (12.1%). Admitted patients were more likely to be male (50.0% vs 33.5%, $p < 0.001$), older (67.5 vs. 58.3 years, $p < 0.001$), non-Caucasian (13.9% vs 6.7%, $p=0.048$) and have more comorbidities (89.3% vs. 76.8%, $p=0.023$). The mean hospital length of stay was 3.1 +/- 2.9 days. Twenty-one (6.4%) of discharged patients returned to the ED within 14 days for recurrent symptoms. Reliability of data collection ($k = 0.88$) showed excellent agreement.

Conclusions: BPPV is a frequent entity in older adults and may have a protracted course and high risk of recurrence. Vestibular suppressant drugs such as meclizine are commonly prescribed and can be associated with significant adverse reactions. In the instances where positional testing is not feasible because of disorders of mobility or other comorbidities, ED patients are often subjected to unnecessary, expensive investigations regardless of age.

No, authors do not have interests to disclose

322 The Impact of the Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) Pandemic on Pediatric Emergency Department Encounters in a Major Metropolitan Area



Stowell J, Pugsley P, Henry M, Edwards J, Jordan H, Norquist C, Katz E, Koenig B, Akhter M/Creighton University School of Medicine (Phoenix) Program, Phoenix, Arizona; University of Arizona College of Medicine - Phoenix, Phoenix, Arizona; Valleywise Health, Phoenix, Arizona, Phoenix, Arizona, US

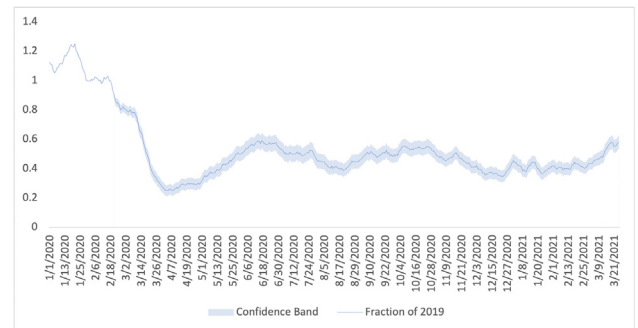
Study Objectives: The end of 2019 marked the emergence of the Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) pandemic. A trend of health care avoidance has been noted in prior pandemics. However, prior studies have suggested that lower acuity patients may disproportionately be the ones avoiding emergency departments (ED). This study seeks to further describe pediatric health care-seeking behaviors during the COVID-19 pandemic.

Study Design/Methods: The objective of this study is to describe the changes in ED pediatric patient census, acuity, and hospitalizations in a single metropolitan area during the COVID-19 pandemic. The study was conducted as a descriptive, retrospective cross-sectional study of individual ED visits occurring before and during the COVID-19 pandemic in the Phoenix, Arizona metropolitan area of Maricopa County. Maricopa county contains 4.485 million people in a catchment area of 9,224 square miles supported by thirty-eight EDs. These include departments with adult and pediatric populations located in urban, suburban, and rural settings. Pre-pandemic there were 1,439,972 total ED visits reported in Maricopa County in 2019. Individual sites collected ED pediatric patient daily census, monthly ED pediatric patient acuity using the Emergency Severity Index (ESI 1-5), and monthly ED pediatric patient disposition (discharge versus admission). Pre-pandemic ED visits occurring from January 1st, 2019, through December 31st, 2019, were compared to ED visits occurring during the pandemic from January 1st, 2020, through March 31st, 2021.

Shapiro-Wilk and the Kolmogorov Smirnov tests were used to assess distribution. The change in mean ED visits between 2019 and 2020 was compared using paired t-test. The change in pre-pandemic and pandemic ED volume was demonstrated using a 7-day moving average of proportions, with Wald method used for creation of 95% intervals for confidence bands. Comparison of patient disposition and acuity (ESI) between periods was performed using chi square tests.

Results/Findings: Twenty-one EDs within Maricopa County elected to participate in the study. The study enrolled 83.8% of the total pandemic ED encounters. The mean daily 2019 and 2020 pediatric encounters were 469 and 271 ($p < .001$), respectively. Pandemic pediatric visit volume went down to as low as 22.1% (95% CI 19.3%–26.0%) of pre-pandemic volume respectively and did not return to 2019 levels through early 2021 (Figure 1). The median pre- and pandemic pediatric ESI scores were 3 and 3, respectively. However, as compared to pre-pandemic, there were more ESI level 2 and 3 patient presentations and fewer level 4 and level 5 patients (p -value < 0.00001) during the pandemic. The pandemic also saw a relative increase in admissions as compared to pre-pandemic. The pre-pandemic pediatric median monthly admission percentage was 5.1% compared to median pandemic monthly admission percentage of 5.6% ($p < 0.01$).

Conclusion: Total ED encounters for pediatric patients were significantly reduced during the COVID-19 pandemic across a single metropolitan area. The reduction was most pronounced during the early pandemic but persisted through early 2021. However, there was also a relative increase in higher acuity presentations and admissions. The development of strategies for mitigating ED avoidance and addressing the distribution of patient care across the health care system will be important in future pandemics.



No, authors do not have interests to disclose

323 Phenobarbital Protocol for Alcohol Withdrawal Syndrome Reduces ICU Length of Stay in Trauma and Burn Patients



Raithel M, Farina N, Bratley A, Hsu C/University of Michigan, Ann Arbor, Michigan, US

Background: Alcohol withdrawal syndrome (AWS) has a high prevalence among the surgical trauma population. There is significant overlap between the physiologic responses to traumatic injury and abstinence from chronic alcohol use. Co-occurrence of AWS and trauma is associated with longer length of stay, increased need for mechanical ventilation (MV), and worse discharge disposition. Benzodiazepines have long been the standard agents for management of withdrawal symptoms. Benzodiazepine efficacy is limited by GABA receptor conformational changes and downregulation in patients with chronic alcohol use. Phenobarbital has been suggested as a superior agent for the management of AWS as it also acts on NMDA, AMPA, and kainite receptors modulating glutamate activity.

Study Objectives: Determine the safety and efficacy of a novel phenobarbital protocol for management of AWS in trauma and burn patients versus the current standard of care.

Methods: A single center mixed trauma-burn ICU developed and employed a protocol using phenobarbital as an adjunct to benzodiazepines in the management of moderate to severe AWS. A retrospective cohort study was performed to compare this phenobarbital protocol to the institution's traditional benzodiazepine-based protocol. Inclusion criteria included age ≥ 21 years, trauma or burn injury, moderate or higher withdrawal severity scores, and 6mg of benzodiazepine administration within 24 hours of presentation. The primary outcome was ICU length of stay. Secondary outcomes included rate of MV initiation after alcohol withdrawal therapy, ICU readmission and mortality.