



ABSTRACTS IN URGENT CARE

- ‘Seat Belt’ Signs Post MVA
- Pain Control in Corneal Abrasions
- Analgesia with Reduction of Shoulder Dislocation
- Can Early PT Help with Sciatica?
- How Vaping Compromises Breathing
- COVID-19 in the Country
- Pandemic Depression—A Real Thing?

■ AVIJIT BARAI, MBBS, MRCS, MSc (CRITICAL CARE), PGCERTCPU, FRNZCUC

Workup for ‘Seat Belt’ Sign in Trauma Patients

Take-home point: The presence of a “seat belt” sign has a high association with intraabdominal organ injury.

Citation: Shreffler J, Smiley A, Schultz M, et al. Patients with abrasion or ecchymosis seat belt sign have high risk for abdominal injury, but initial computed tomography is 100% sensitive. *J Emerg Med.* 2020;59(4):491-498.

Relevance: Patients commonly present with abdominal “seat belt” signs, such as abrasions and ecchymoses, following motor vehicle accidents (MVA). The assessment and management of these patients is controversial. This article attempts to address clinical assessment and imaging techniques for patients presenting with seat belt signs after an MVA.

Study summary: This is a retrospective cohort study conducted in a level 1 trauma center in Louisville, KY on 425 patients after MVA. Abdominal abrasions were present in 99 patients, ecchymoses were found in 177 patients, and 77 patients had both abrasions and ecchymoses. Interestingly, among patients who underwent CT of the abdomen, intraabdominal injury was found in 45.4% of those who had only abrasions as seat belt sign, in 32.8% of patients with ecchymoses, and in 37.1% of patients with both abrasions and ecchymoses. The abrasion-only group had a 1.7 times higher risk of intraabdominal injury on CT than those presenting with ecchymoses alone.

The authors conclude that the presence of a seat belt sign on

the abdominal wall following trauma warrants CT imaging of the abdomen due to the high prevalence of intraabdominal injury.

Limitations: This retrospective cohort study was conducted in a single center, a level 1 trauma center. Patients with seat belt sign presenting to urgent care are likely to have had less significant mechanism of injury and may be at lower risk for associated intraabdominal injury. ■

Topical Anesthetics for Corneal Abrasions

Take-home point: Topical tetracaine is an effective analgesic in corneal abrasions.

Citation: Shipman S, Painter K, Keuchel M, Bogie C. Short-term topical tetracaine is highly efficacious for the treatment of pain caused by corneal abrasions: a double-blind, randomized clinical trial. *Ann Emerg Med.* 2020;27;S0196-0644(20) 3073903.

Relevance: The management of pain in corneal abrasion can be challenging. There is some concern about application of topical anesthetics in such cases due to a theoretical risk of corneal injury. This article explores the efficacy (as well as safety) of prescribing a topical anesthetic for pain management in cases of corneal abrasion.

Study summary: This was a prospective double-blind randomized controlled trial conducted in an urban emergency department in Oklahoma City on 111 patients with corneal abrasion. The patients were randomized into two groups: those treated with topical tetracaine (n=56) or with placebo (n=55). Each patient was given either tetracaine or placebo up to every 30 minutes as needed for up to 24 hours. Their pain scores were assessed at 24 to 48 hours following the initial presentation.

The authors found that the average pain score was significantly lower in the tetracaine group (pain score = 1) compared



Avijit Barai MBBS, MRCS, MSc (Critical Care), PgCertCPU, FRNZCUC works in the ED at Christchurch Hospital in New Zealand. His professional interests include urgent care medicine, emergency medicine, critical care, point-of-care ultrasound, and medical education.

with the placebo group (pain score = 8). The difference between the groups was statistically significant (difference = 7, 95% CI 6-8, $p < 0.001$). Adverse events were not statistically different between groups: 3.6% in the tetracaine group vs 11% in the placebo group. ■

Limitations: This single-center study had a small sample size.

Intraarticular Anesthetic for Reduction of Shoulder Dislocation

Take-home point: Intraarticular anesthetic injections provide safe, inexpensive, and effective analgesia in cases of anterior shoulder dislocation.

Citation: Penn DM, Williams O. BET 1: Can acute shoulder dislocations be reduced using intra-articular local anaesthetic infiltration as an alternative to intravenous analgesia with or without sedation? *Emerg Med J.* 2020;37(11):725-728.

Relevance: There are multiple approaches to analgesia and anesthesia prior to manipulation of anterior shoulder dislocation. Evidence to support a best practice is limited.

Study summary: This was a systematic review exploring the usefulness of intraarticular injection of local anesthesia in the management of anterior shoulder dislocation compared with intravenous analgesics. Following a rigorous literature search, the authors identified 114 articles which examined the usefulness of intraarticular anesthetic use for such cases. Ultimately, 11 articles were included in the final review. Out of these articles, nine were prospective randomized controlled trials.

Overall, there was no significant difference in pain scores between the intraarticular anesthetic and IV analgesia group. Patient satisfaction was somewhat higher among the IV analgesia group. Intraarticular anesthetic only was associated with less resource utilization and fewer complications than IV analgesia. The authors concluded that the use of intraarticular anesthetic for procedural analgesia is a cheap, safe, and effective method of management of anterior shoulder dislocation. ■

Physical Therapy for Sciatica

Take-home point: Early physical therapy referral for patients with acute sciatica improved disability.

Citation: Fritz JM, Lane E, McFadden M, et al. Physical therapy referral from primary care for acute back pain with sciatica: a randomized controlled trial. *Ann Intern Med.* 2020;174(1):8-17.

Relevance: Acute sciatica is one of the costliest and most challenging conditions managed in urgent care.

Study summary: This was a randomized controlled trial con-

ducted in two primary care clinics in Utah. Participants were randomized into two groups (110 in each group): 1) early physical therapy (EPT), which included both exercise training and manual therapy, along with one education session and 2) a usual care group, who received one session of education alone. The subjects were followed for 12 months. The primary outcome was disability as measured by the Oswestry Disability Index score.

Ninety-three participants in the EPT group and 98 in the usual care group completed 12 months of follow-up. The authors found a statistically significant reduction of OSW score among the EPT group compared with the usual care group at 4 weeks, 6 months, and 12 months. Surprisingly, despite improved back pain and disability measures in the EPT group, there was no difference in healthcare utilization or missed workdays.

Limitations: This was a relatively small and nonblinded study of predominantly white patients. ■

Vaping and Respiratory Complications

Take-home point: Extrapulmonary symptoms are common among frequent users of e-cigarettes.

Citation: Layden JE, Ghinai I, Pray I, et al. Pulmonary illness related to e-cigarette use in Illinois and Wisconsin. *N Engl J Med.* 2020;382(10):903-916.

Relevance: Despite increasing utilization, there is a paucity of literature on the health effects of e-cigarette use.

Study summary: This retrospective observational study explored the association of pulmonary complications with the recent use of e-cigarette among previously healthy adults in Illinois and Wisconsin (N=98). The majority of the patients were young males (79%) with a median age of 21 years. Ninety-five percent required hospitalization, 53% were admitted to the ICU, and 26% required mechanical ventilation. All had constitutional symptoms as well as respiratory symptoms. Approximately 80% had gastrointestinal manifestations.

Limitations: This was a small retrospective study limited to two midwestern U.S. States. ■

COVID-19 Literature Reviews

The Impact of COVID-19 in Rural America

Take-home point: There is a significant discrepancy in the impact of COVID-19 between rural and urban areas in the U.S.

Citation: Mueller JT, McConnell K, Burow PB, et al. Impacts of the COVID-19 pandemic on rural America. *Proc Natl Acad Sci USA.* 2021;118(1):2019378118.

Relevance: COVID-19 has had a profound impact on the health-care system. However, most research has focused on urban areas; little is known about its impact in rural America.

Study summary: This article reports data from a survey of 1,009 participants residing in rural areas of the U.S. to evaluate the effects of COVID-19 on their lives. About 28% stated they have had at least one COVID-19 exposure; 2.26% had COVID-19 themselves, 8.52% had a family member with COVID-19, and 19.35% had an acquaintance with COVID-19. Participants with higher levels of education were less likely to report the COVID-19 infection. The negative impact of COVID-19 on the financial, mental, and overall well-being of these rural Americans was significant. However, the majority of respondents reported no impact on their physical well-being. ■

The Global Mental Health Consequences of COVID-19

Take-home point: Prevalence of depression was seven times higher from January 1, 2020 to May 8, 2020 (2 months prior to and 2 months after declaration of COVID-19 as a pandemic) compared with global estimated prevalence from 2017.

Citation: Bueno-Notivol J, Gracia-García P, Olaya B, et al. Prevalence of depression during the COVID-19 outbreak: a meta-analysis of community-based studies. *Int J Clin Health Psychol.* 2021;21(1):100196.

Relevance: COVID-19 continues to affect the world at-large. It is unknown to what extent the continued pandemic will affect the population's mental health.

Study summary: This systematic review and meta-analysis of 12 studies conducted during the COVID-19 pandemic examined its effects on the prevalence of depression. A random effect model was used to obtain a pooled proportion of depression. The investigators found that the prevalence of depression among the published cross sectional community-based studies ranged from 7.45% to 48.3%. The pooled prevalence of depression was 25% (95% CI, 18%-33%), which was about seven times higher than it was in 2017 (3.4%).

Limitations: The studies included in this review were all observational and the range of prevalence of depression varied widely. Additionally, no standard instrument was used to measure depression across populations. ■

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