ABSTRACTS IN URGENT CARE

- Cooling Pain from Digital Nerve Blocks
- Safety of Corticosteroids in Children
- Predicting the Course of Pediatric CAP
- Is Tranexamic Acid Helpful for Epistaxis?
- Drug Therapy for Sciatica
- Imaging May Not Correlate with Lumbar Pain
- COVID-19 Vaccination in Lactating Patients

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Applying Ice Reduces Pain from Digital Nerve Blocks

Take-home point: Use of an ice pack applied prior to the administration of a digital nerve block reduces pain from local anesthetic injection.

Citation: Rasooli F, Sotoodehnia M, Nejati A, Payandemehr P. The assessment of ice pack effect in pain reduction during digital nerve block: a randomized clinical study. *Turk J Emerg Med*. 2020;20(2):81-5.

Relevance: Ironically, administration of local anesthetic is the most uncomfortable part of caring for finger injuries. It is worthwhile to understand how this discomfort can be minimized.

Study summary: This was a prospective, randomized, nonblinded trial performed on parallel groups of patients presenting to two university hospitals in Tehran, Iran. One hundred patients, all candidates for digital nerve blocks, were randomized into the control group or intervention group. The intervention group had ice packs applied to the affected digit prior to nerve block procedure being performed while the control group did not.

The authors found that there was a dramatic reduction in mean needle stick (1.5 vs 6.8) and infiltration associated (2.7 vs 8.5) pain scores in patients who had the ice packs applied prior to nerve block procedure being performed. There was also significantly higher patient satisfaction in the intervention group.

Limitations: Small, single-center study with unblinded design. ■

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Questioning the Safety of Oral Corticosteroid Bursts in Children

Take-home point: There was a two-fold increase in risk of GI bleeding, sepsis, and pneumonia within a month of prescribing oral corticosteroids in children.

Citation: Yao T, Wang J, Chang S, et. al. Association of oral corticosteroid bursts with severe adverse events in children. *JAMA Pediatr*. 2021;175(7):723-729.

Relevance: Corticosteroid bursts are among the most commonly prescribed medications in children and are often used for conditions where there is limited evidence of benefit because they are considered very safe. This study questions the safety of this practice. Clinicians prescribing corticosteroid bursts to children should weigh the benefits against the risks of severe adverse events

Study summary: This was a retrospective review of medical records of children prescribed a short course of oral steroids, up to 14 days, from the National Health Insurance Program in Taiwan. The review covered 99% of the Taiwanese population. The authors focused on four severe adverse events—gastrointestinal (GI) bleeding, sepsis, pneumonia, and glaucoma, after initiation of a corticosteroid burst.

The authors found that in the 5-year period reviewed, 42% of the 4,542,623 participants younger than 18 years had received at least one course of oral corticosteroids. Common indications for prescribing steroids included acute respiratory tract infections and allergic diseases, which accounted for 65% of all cases. Corticosteroid bursts were associated with a 1.4- to 2.2-fold increase of GI bleeding, sepsis, and pneumonia within the first month after receiving the prescription. There was no increased risk of glaucoma found. These effects were observed between 30 and 90 days postadministration of the steroid treatment. The vast majority (91%) of patients were healthy and without any previous comorbidities.

"Using evidence-based therapies in patients presenting with low back pain ensures a large number of patients are treated with the most effective medications with least risk for adverse events."

Limitations: This was a retrospective study based in Taiwan. Additionally, the authors did not consider that the co-prescribing of antibiotics and medication compliance was not known. Duration of steroid prescriptions included was up to 14 days, which is somewhat longer than most steroid bursts commonly prescribed. ■

Clinician 'Gestalt' in Community-Acquired Pneumonia (CAP)

Take-home point: Clinicians have only fair ability to discriminate which children with CAP would develop severe complications.

Citation: Gao H, Ambroggio L, Shah S, et. al. Predictive value of clinician "gestalt" in pediatric community-acquired pneumonia. *Pediatrics*. 2021;147(5):e2020041582.

Relevance: Over-reliance on clinical "gestalt" may potentially increase risk for complications in children presenting with CAP. The use of evidence-based risk stratification tools can help reduce this risk in low-medium risk patients.

Study summary: This was a planned analysis of a prospective cohort study of children with CAP who presented to the ED at Cincinnati Children's Hospital Medical Center. The enrolled patients were initially assessed by a clinician. The researchers subsequently asked the clinicians for their clinical impressions, including the probability of the child developing severe complications of CAP which included respiratory failure, empyema or effusion, lung abscess or necrosis, metastatic infection, sepsis or septic shock, and death.

Severity outcomes occurring after the ED visit were assessed through abstraction from the electronic health record and manual record review.

The authors found that of the 1,075 patient enrolled, 37 developed a severe complication. ED clinicians had only fair ability to discriminate those who went on to develop complications from those who did not. The more experienced clinicians had higher discriminatory capabilities than those with less experience. Clinicians also were found to underestimate the severity of CAP in this study.

Limitations: The study did not track the decision-making process of the clinicians in detail. There was no explicit definition for disease severity, therefore differing criteria may be used by other clinicians. ■

Tranexamic Acid May Not Be Helpful for Epistaxis

Take-home point: Tranexamic acid (TXA) performed no better than placebo when used for control of anterior epistaxis.

Citation: Ruben A, Appelboam A, Stevens KN, et al. The Use of Tranexamic Acid to Reduce the Need for Nasal Packing in Epistaxis (NoPAC): Randomized Controlled Trial. *Ann Emerg Med*. 2021;77(6):631-640.

Relevance: The ability to control bleeding in epistaxis without the need for nasal packing is important for patient comfort. Prior studies have suggested that TXA may be an effective adjunct to aid in hemorrhage control for epistaxis.

Study summary: This was a pragmatic, 1:1 block randomized, double-blind, placebo-controlled trial in 26 EDs across the United Kingdom. Patients that had ongoing bleeding from anterior epistaxis which had already been treated with direct pressure and ice therapy were randomized to receive either TXA or placebo applied topically. Any further therapy was done at the discretion of the treating physician—cautery, nasal packing, or other topical application. The authors found no statistically significant difference in the rate of need for anterior nasal packing between the TXA and placebo groups.

Limitations: Recruitment of patients was only done during the hours of work of a participating research nurse, potentially giving rise to selection bias. ■

Pharmacotherapy for Low Back Pain and Sciatica

Take-home point: Ketoprofen gel, IV acetaminophen and IV morphine showed some benefits in the treatment of low back pain, while corticosteroids did not show benefit.

Citation: Oliveira CB, Amorim HE, Coombs DM, et. al. Emergency department interventions for adult patients with low back pain: a systematic review of randomized controlled trials. *Emerg Med J*. 2021;38(1):59–68.

Relevance: Low back pain is among the most common UC complaints. Using evidence-based therapies ensures a large number of patients are treated with the most effective medications with least risk for adverse events.

Study summary: This was a systematic review of randomized

controlled trials for patients with nonspecific low back pain and/or sciatica presenting to EDs where study interventions were administered, and patient-reported outcomes were measured during the visits. Fifteen papers were identified as suitable for review and included. The authors found that ketoprofen gel showed significant effects in reducing pain intensity in patients with low back pain compared with placebo. IV morphine and acetaminophen were both more effective in treating sciatica than placebo. They also noted that corticosteroids were not effective in the treatment of nonspecific low back pain or sciatica. ■

Limitations: Systemic review method used by the authors relied on the methodology of the original investigators. Endpoints were immediate pain relief. Pain relief at follow-up was not examined. Additionally, the medications and formulations may not be available in certain urgent care centers.

Lumbar Radiographic Abnormalities Correlate Poorly with Back Pain Severity

Take-home point: Changes found on plain lumbar radiography provide limited value in the decision-making process for treatment of low back pain.

Citation: Chen L, Perera R, Radoj IM, et al. Association of lumbar spine radiographic changes with severity of back pain–related disability among middle-aged, community-dwelling women. *JAMA Netw Open*. 2021;4(5):e2110715.

Relevance: Lumbar x-rays are among the most requested tests by patients; however, multiple guidelines (eg, Choosing Wisely, ACR Appropriateness Criteria) advise of their inutility for the majority of patients with low back pain.

Study summary: This was a population-based prospective study using data from the Chingford 1000 Women Study, an ongoing longitudinal study of musculoskeletal disease in the general population of the UK. In this study, participants had lateral lumbar spine imaging taken at year 9 of the study, and back pain assessment questionnaires were done at that time and subsequently at year 15. The authors found no evidence to support an association between a higher number of segments with lumbar radiographic changes (K-L grade, osteophyte, and disc space narrowing) and more severe back pain-related disability scores. These results remained unchanged after accounting for potential interactions with confounders, such as age, BMI, and smoking status.

Limitations: This is an observational study of women only. Additionally, 98% of the study population were Caucasian. ■

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COVID-19 Abstract Immunogenicity of COVID-19 mRNA Vaccines in Pregnant and Lactating Women

Take-home point: Vaccination with COVID-19 mRNA vaccines results in detectable antibodies in the fetal cord blood and breast milk samples.

Citation: Collier A, McMahan K, Yu J, et. al. Immunogenicity of COVID-19 mRNA vaccines in pregnant and lactating women. *JAMA*. 2021;325(23):2370-2380.

Relevance: mRNA vaccination strategy is newly applied for SARS-CoV-2. There is significant interest and concern for the effects of these vaccines in the setting of pregnancy and breastfeeding.

Study summary: This was a prospective cohort study of pregnant and lactating women who received mRNA vaccination for SARS CoV-2 in Israel. Patients recruited were given either one of the two commercially available mRNA vaccines, mRNA-1273 (Moderna) or BNT162b2 (Pfizer-BioNTech). All participants provided blood, some provided infant cord blood at delivery, and some provided breast milk.

A total of 103 participants were recruited, of which 30 were pregnant; 16 were lactating; and 57 were neither pregnant nor lactating. Additionally, 70 women 18 to 45 years of age who tested positive for COVID-19, including 60 pregnant women, were used as control participants.

Unsurprisingly, the authors found the COVID-19 mRNA vaccines were immunogenic in all participants compared with controls. There was also detection of binding and neutralizing antibodies in infant cord blood, suggesting efficient transplacental transfer of maternal antibodies. This could suggest that maternal COVID-19 vaccination in pregnancy may confer protection for neonates who are currently ineligible for vaccination. Maternal vaccination also elicited binding and neutralizing antibodies in breast milk.

Limitations: This was a small study in an ethnically homogenous population with unrandomized design. It is unclear to what extent the levels of antibodies in cord blood and/or breast milk prevent or mitigate risk of COVID-19 and its complications in infants. ■