ABSTRACTS IN URGENT CARE

- Colchicine in Acute Gout
- POCUS and Necrotizing Fasciitis
- Assessing Patient Satisfaction
- Misinterpreting Pediatric Radiographs
- Lung Ultrasound and Pediatric Pneumonia
- Diagnosing Pneumothorax

IVAN KOAY, MBCHB, FRNZCUC, MD

A Review of the Evidence for Colchicine in Acute Gout

Take-home point: Colchicine appears to be no more effective than NSAIDs for acute gout flares and evidence does not indicate greater efficacy at higher doses.

Citation: Gottlieb M, Rabah W, Long B. Colchicine for acute gout. *Acad Emerg Med*. 2022;29(3):387-388. Epub ahead of print December 13, 2021.

Relevance: Colchicine has been used historically in treating acute gout flares, a common presentation to urgent care.

Study summary: This was a brief summary of the present literature and evidence available of the effectiveness of colchicine in the treatment of gout. Current guidelines recommend that NSAIDs, oral colchicine, or glucocorticoids may be considered for the treatment of acute gout flares.

The authors reviewed four meta-analyses and systematic reviews comparing colchicine with placebo, NSAIDs, or higher doses of colchicine. They found that lower-dose colchicine (1.8 mg over 1 h) improved pain control compared with placebo. Higher-dose colchicine (4.8 mg over 6 h) also improved pain compared with placebo. Compared with lower-dose colchicine, higher-dose colchicine did not improve pain. Lower-dose colchicine (0.5 mg three times per day for 4 days) did not improve pain compared with NSAIDs (naproxen 750 mg).

Editor's comments: This was a review article and therefore limited by the quality of the original research. The sample sizes of most of the studies included were small. Most notably, the study suggests that NSAIDs and colchicine are roughly equivalent and that higher-dose colchicine does not seem to result in greater relief of symptoms. ■

Ivan Koay, MBChB, FRNZCUC, MD is an urgent care physician based in Dublin, Ireland, as well as an Examiner and Trainee Supervisor for the Royal New Zealand College of Urgent Care Education Faculty for the Urgent Care Medicine Fellowship, Royal College of Surgeons Ireland.

Diagnosing Necrotizing Fasciitis with Point-of-Care Ultrasound

Take-home point: There is promising potential for the use of point-of-care ultrasound (POCUS) in diagnosing necrotizing fasciitis (NF).

Citation: Lahham S, Shniter I, Desai M, et al. Point of care ultrasound in the diagnosis of necrotizing fasciitis. *Am J Emerg Med*. 2022;51:397–400.

Relevance: POCUS can augment clinical examination when considering various conditions. NF is a life-threatening, time-sensitive diagnosis and increasing tools available in urgent care to expedite diagnosis is critical.

Study summary: This was a prospective study by convenience sampling of patients presenting to the ED at an academic, Level 1 trauma center. Eligible patients underwent a POCUS examination at bedside by the treating physician prior to CT scan or surgical consultation. Outcome measures were the sensitivity, specificity, positive predictive value (PPV), and negative predictive value (NPV) of POCUS in identifying patients with NF. Early POCUS findings of NF were thickened fascial planes with fluid accumulation, turbid fluid collections, and subcutaneous edema. The presence of fluid tracking along the deep fascial layers was useful in differentiating NF from cellulitis.

The authors enrolled 64 patients. They found a sensitivity of 100.0% (95% CI: 63.1%–100%), specificity of 98.2% (95% CI: 90.4%–100%), PPV of 88.9% (95% CI:51.8–99.7%), and NPV of 100% (95% CI: 93.5%–100%) in the diagnosis of NF.

Editor's comments: This was a convenience sample from a single center, which could lead to selection bias. The consent process of the study meant that seriously ill patients were not included. The study did not evaluate the training required for

the POCUS operators, but given that this is a large, academic medical center, it is likely that clinicians were more comfortable using POCUS than many urgent care providers. ■

Google Reviews in Assessing Patient Satisfaction

Take-home point: Google Reviews contains a substantial quantity of patient satisfaction data.

Citation: Derdzakyan N, Pourmand A, Shesser R, et. al. The potential use of Google Reviews to assess patient satisfaction in the emergency department. *Am J Emerg Med*. 2022;52: 110–113.

Relevance: Google Reviews are the most publicly available source of customer satisfaction data. Urgent care center strategies for growing patient volumes rely heavily on positive reviews.

Study summary: This was a cross-sectional study of Google Reviews data for EDs in the United States. Data were collected from Google Reviews in all 50 states and Washington, DC using a Google search engine query for each state. Data analysis included topic analysis of review text which categorized its contents into topics based on prior research: Physician, Nurse, Wait, Environment, Other Staff, Financial, and Medical Personnel. Google Reviews text "sentiment analysis" was performed by an artificial intelligence service that provides "sentiment scoring" across four categories (positive, negative, neutral, mixed).

The authors found a total of 13,883 Google Reviews regarding 255 unique ED facilities. Most had less than 200 reviews (median=30 reviews/ED). The topics "Wait" and "Financial" resulted in significant negative coefficients (1-star ratings) whereas topics involving ED staff resulted in significant positive coefficients (5-star ratings).

Editor's comments: Patient reviews are inherently biased. This study highlights how Google Reviews are no exception. ■

Diagnostic Errors in Pediatric Radiographs

Take-home point: Ankle, elbow, and humeral condylar fractures were missed most often compared with other fracture patterns.

Citation: Li W, Stimec J, Camp M, et al. Pediatric musculoskeletal radiographs: anatomy and fractures prone to diagnostic error among emergency physicians. *J Emerg Med*. 2022; 11:S0736-4679.

Relevance: Interpretation of pediatric musculoskeletal (MSK) radiographs can be challenging even for the most experienced urgent care clinician. Care needs to be taken when interpreting specific areas, especially lateral condylar injuries.

Study summary: This was a study to identify radiograph-specific factors that resulted in diagnostic interpretation errors for emergency physicians (EPs) reviewing pediatric MSK radiographs. Of 1,850 pediatric MSK radiographs obtained in a pediatric ED and reviewed by EPs to rule out fracture or dislocations, there was an equal mix of pathology and normal images used. Radiographs were organized into six learning modules, each of which contained 200–400 case examples, presented with the standard number of views for a particular body region: shoulder, clavicle, humerus, elbow, wrist, forearm, hand, pelvis, femur, knee, tibia-fibula, ankle, and foot.

There were 244 EPs recruited from 22 countries; 179 (73.4%) were residents of Canada or the U.S. They found that supracondylar fractures of the elbow were the easiest to identify; lateral condylar fractures of the elbow were the most difficult. Diagnostic errors in radiographs without fractures or dislocations were largely due to normal anatomy or projection issues that were mistaken for fractures. Growth plate and avulsion fractures and dislocations were more difficult to diagnose.

Editor's comments: The radiographs used were from an electronic learning platform, which may not translate to a clinical setting. Information regarding the level of training and experience of participants was not investigated. Pathological radiographs were more common in the study set than would be expected in any clinical setting. ■

Accuracy of Lung Ultrasound for Diagnosing Pneumonia in Children

Take-home point: Lung ultrasound (LUS) is an effective imaging technique for detecting childhood pneumonia.

Citation: Lu X, Jin Y, Li Y, et al. Diagnostic accuracy of lung ultrasonography in childhood pneumonia: a meta-analysis. *Eur J Emerg Med*. 2022;29(2):105-117.

Relevance: Identifying accurate ways for diagnosing pneumonia without radiation exposure is of particular interest in pediatric populations.

Study summary: This was a meta-analysis summarizing the available data on the diagnostic accuracy of LUS in childhood pneumonia. Articles selected concerned patients with suspicion of pneumonia, available confirmatory CXR data, and who had undergone LUS to diagnose pneumonia. Twenty-nine publications were identified for analysis. The pooled sensitivity, specificity, positive predictive value (PPV) and negative predictive value (NPV) with 95% CI for diagnostic accuracy of LUS were calculated and compared with CXR. The authors found that average pooled sensitivity and specificity were 83% (95% CI, 81–84%) and 84% (95% CI, 81–86%) respectively for LUS.

Editor's comments: Chest x-ray was used as the gold standard for diagnosing pneumonia. Ultrasound's test characteristics are particularly user-dependent and it remains relatively rarely available in many UC settings. ■

The 35 mm Rule for Guidance of Pneumothorax Management

Take-home point: The 35 mm guideline could potentially, safely decrease chest tube insertions in hemodynamically stable patients without hemothorax.

Citation: Figueroa J, Karam B, Gomez J, et al. The 35 mm rule to guide pneumothorax management: increases appropriate observation and decreases unnecessary chest tubes. *J Trauma Acute Care Surg*. 2022;92(6):951-957. Epub ahead of print February 4, 2022.

Relevance: Avoiding unnecessary chest tube insertion will minimize risk of complications and unnecessary expense to patients with small pneumothorax (PTX).

Study summary: This was a single-center retrospective review of patients presenting to a Level 1 trauma center in the U.S. Patients included had a CT-diagnosed traumatic PTX with dimensions obtained by nonradiological researchers. There were two cohorts in the study: those pre- and postimplementation of a 35 mm dimension guideline. Patients were observed for 4 hours postadmission; those who deteriorated and required chest tube insertion were deemed as failures of observation. Reasons for failure included clinical deterioration (respiratory rate >30, SpO_2 <90% on room air, or hemodynamic changes attributed to PTX), presence of new hemothorax, and significant progression of the PTX in size. PTX enlargement was assessed on a routinely ordered CXR 4-6 hours after the CT scan.

Of 266 patients included in the study, 62% were examined postimplementation of the 35 mm guideline. The authors found decreased chest tube insertions postimplementation of the guideline with no increase in observation failure, length of stay or complication rates. The most common reason for observation failure was the presence of a new PTX (41%).

Editor's comments: The use of CT imaging to diagnose PTX makes this study somewhat impractical to apply, as such imaging can rarely be obtained in urgent care. However, it is important to be aware of increasing trends toward observation of small PTXs to guide patient expectations before being referred to the ED. ■