



ABSTRACTS IN URGENT CARE

- Pediatric Lyme Disease and Race
- Predictive Value (or Not?) of Hyperacute T-Waves
- Rapid Influenza Diagnostic Tests and Decision-Making
- IVAN KOAY, MBChB, FRNZCUC, MD
- Does Regular Feedback Influence Prescribing?
- Reducing Anterior Shoulder Dislocation
- Language Barriers in Triage

Lyme Disease Diagnosis in Children of Different Racial Groups

Take-home point: Black children with Lyme disease were more likely to have arthritis rather than cutaneous findings at the time of diagnosis.

Citation: Hunt K, Michelson K, Balamuth M, et al. Racial differences in the diagnosis of Lyme disease in children. *Clin Infect Dis.* 2023;76(6):1129-1131.

Relevance: Erythema migrans (EM) is commonly felt to represent the first clinical finding in patients with Lyme disease. EM is understandably variable in its appearance depending on skin tone. Appreciating these differences can help clinicians approach Lyme as a diagnostic consideration more equitably across ethnicities.

Study summary: This was a prospective cohort study at eight EDs participating in the Pedi Lyme Net clinical research network in the eastern U.S.

The study enrolled children undergoing clinical evaluation for Lyme disease. Demographics collected included clinical history and physical examination findings. Race was reported by the child's caregiver. Treating clinicians assessed the presence or absence of EM (as well as single or multiple lesions) on physical examination and, if present, reported the diameter of the largest lesion.

The authors screened 4,003 children; 957 children (23.9%) had confirmed Lyme disease. Lyme was confirmed in 88 (9.2%) based on a diagnostic EM lesion alone, while 781 (81.6%) had a positive two-tier serology alone, and 88 (9.2%) had both. Black children were less likely to have

Lyme disease diagnosed in the ED after adjustment for age and local Lyme disease incidence (adjusted odds ratio [aOR] = 0.63; 95% CI (0.48-0.81)). Among children with Lyme disease, Black children were less likely to be diagnosed with cutaneous manifestations (aOR = 0.34; 95% CI, 0.14-0.79) and more likely to be diagnosed with a swollen joint on examination (aOR=3.68; 95% CI, 2.13-6.36).

Editor's comments: The authors compared Black children with other races in a binary manner. Other skin tones were not examined. Additionally, race has been recognized as a social construct rather than a biologic variable and correlation with actual skin tone is inexact. While a less obvious EM rash may drive this pattern of diagnosis, it's worth noting that other social determinants of health associated with race other than skin tone may also lead to later presentations in cases of Lyme. ■

Do Hyperacute T-waves Predict Impending Acute Myocardial Infarction?

Take-home point: T-wave amplitude greater than the 95th percentile had no useful diagnostic value in determining acute myocardial infarction (AMI) in this study.

Citation: Koechlin L, Strebelt I, Zimmermann T, et al. Hyperacute T wave in the early diagnosis of acute myocardial infarction. *Ann Emerg Med.* 2023 Feb 9:S0196-0644(22)01327-0.

Relevance: Pronounced T-waves, commonly referred to as "hyperacute T-waves," have been cited as harbingers of impending AMI.

Study summary: This was a post-hoc analysis of the prospective international multicenter Advantageous Predictors of Acute Coronary Syndrome Evaluation of patients presenting to the ED with acute chest discomfort. Patients recruited had recorded digital 12-lead ECG data that al-



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lowed automated quantification of T-waves. Adjudication of the final diagnosis was performed by two independent board-certified cardiologists or cardiology Fellows based on review of medical records, including troponin and coronary angiography findings.

Out of 4,323 patients prospectively enrolled, 2,457 were eligible for the analysis of ECG characteristics. The authors found 445 patients (18%) were ultimately diagnosed with AMI, 82 (3.3%) of whom had a STEMI, and 363 (15%) of whom had an NSTEMI. Patients with AMI tended to have smaller T-wave amplitudes than patients with other causes of chest pain. T-wave amplitude greater than the 95th percentile had no useful diagnostic value in this sample.

Editor’s comments: This was an ED-based study and a post-hoc analysis. Patients with end-stage renal disease were not included in the study. Despite these limitations, it seems reasonable that we begin to rethink the classic dogma that prominent T-waves are necessarily concerning as isolated findings. ■

Availability of Point-of-Care Tests and Their Effect on Decision-Making

Take-home point: There were significant differences in clinician decision-making when rapid influenza diagnostic tests were used during clinical encounters with patients who presented with acute respiratory infection symptoms.

Citation: Stamm B, Tammerius J, Reddy S, et al. The influence of rapid influenza diagnostic testing on clinician decision-making for patients with acute respiratory infection in urgent care. *Clin Infect Dis.* 2023 Feb 1; ciado38.

Relevance: Most urgent care centers have access to rapid influenza diagnostic tests (RIDT). The use of these tests is frequently a subject of debate.

Study summary: This was a post-hoc analysis of data from another study that investigated the patient’s ability to self-collect nasal swabs for rapid testing. Two sets of analyses were performed. The primary analysis compared the RIDT-tested population with a matched non-RIDT-tested

population to determine if differences in clinical decision-making existed when treating patients who presented with ARI symptoms in the presence or absence of an RIDT. The secondary analysis compared participants only in the RIDT-tested population to determine if RIDT (+) patients are treated differently based on the diagnosis of influenza compared with RIDT (–) patients.

Data from 1,166 participants were analyzed. The authors found an 85% reduction in the odds of prescribing an antibiotic in RIDT (+) participants (odds ratio [OR] = 0.15; 95% CI, 0.08–0.27; P<.0001) and a 30% reduction in the odds of prescribing an antibiotic in the RIDT (–) participants (OR, 0.70; 95% CI, 0.57–0.86; P=.001).

The RIDT-tested population, regardless of RIDT result, had a 48% reduction in the odds of antibiotics prescribed compared with non-RIDT-tested participants (OR, 0.52; 95% CI, .43–.63; P<.0001). A 92.3% increase in the odds of prescribing antivirals to RIDT (+) participants was identified when compared with the matched non-RIDT-tested population (OR=10.23; 95% CI, 5.78–19.72; P<.0001).

Editor’s comments: This was a rare UC-based study, making the results more relevant than most prior studies on this topic for UC clinicians. In this study, RIDT use reduced antibiotic prescribing and increased antiviral prescribing in patients with acute respiratory illness.

It is worth noting there was a presumption that this was best practice. However, this does not always correspond with evidence-based practice. For example, antivirals that are initiated late in the course of illness or in otherwise healthy patients with influenza may be of no benefit. ■

Effects of Regular Feedback on Antibiotic Prescribing Rates

Take-home point: In this study, quarterly personalized antibiotic prescribing audits and feedback with peer benchmarking did not reduce antibiotic prescribing amongst primary care physicians.

Citation: Aghlmandi S, Halbeisen F, Saccilotto R, et al. Effect of antibiotic prescription audit and feedback on antibiotic prescribing in primary care: a randomized clinical trial. *JAMA Intern Med.* 2023;183(3):213-220.

Relevance: Antibiotic prescribing metrics and feedback have become common means of evaluating clinicians in UC practice. It is unclear to what extent this influences practice patterns.

Study summary: This was a randomized controlled trial conducted among 3,426 primary care physicians in Switz-

erland with medium-to-high antibiotic prescription rates over a 2-year period. Eligible physicians were randomized to the intervention and control groups in a 1:1 ratio. Quarterly antibiotic prescription feedback was compared with overall prescription rates and antibiotic type per 100 consultations as well as personal prescription rates for the same 3 months of the preceding year. Each category was also compared with the prescription rates of peer physicians. Physicians in the control group were not informed that their antibiotic prescription was monitored for the duration of the trial.

The authors found antibiotic prescription rates in the intervention group additionally increased during the first year by 0.5% (95% CI, -0.1% to 1.2%) and during the entire trial period by 0.5% (95% CI, -0.2% to 1.3%) when compared with the control group.

Prescription rates for specific antibiotics also increased during the intervention period. Estimates from the per-protocol analysis showed no reductions in antibiotic prescriptions between both groups and no differences in infection-related and overall hospitalization rates between both groups.

Editor's comments: The study did not examine the appropriateness of prescriptions. This trial involved only Swiss primary care physicians. It is unclear to what extent these results can be generalized to nonphysician prescribers in UC in other countries. ■

Anterior Shoulder Dislocation Reduction Techniques: Which Is the Best for Success?

Take-home point: The Boss–Holzach–Matter (BHM)/Davos technique and the Fast, Reliable, and Safe (FARES) technique demonstrated the most favorable values for successful reduction. The FARES technique had the lowest rating for pain associated with reduction.

Citation: Gonai S, Yoneoka D, Miyoshi T, et al. A systematic review with pairwise and network meta-analysis of closed reduction methods for anterior shoulder dislocation. *Ann Emerg Med.* 2023;81(4):453-465.

Relevance: Anterior shoulder dislocation is a common injury. UC practitioners should have familiarity with the most effective, safe, and pain-free methods to attempt initial reduction, especially as delays to ED care can be substantial.

Study summary: This was a systematic review using the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines to evaluate the various closed shoulder dislocation reduction techniques.

The authors screened 1,833 records by title and abstract and included 14 trials that enrolled adult patients with an acute anterior shoulder dislocation, and compared specific reduction methods. Surface under the cumulative ranking (SUCRA) was calculated to evaluate the superiority (or ranking) of each method.

In their systematic review, the authors found the FARES method was significantly less painful than the Kocher technique. Success rates of techniques, such as FARES, BHM, Spaso, modified external rotation, external rotation, and scapular manipulation techniques tend to be higher than others, although many of the results were similar.

In the SUCRA plot of reduction time, modified external rotation was the best in the overall analysis, followed by the FARES method which was similar in value. In comparison of success rates, FARES, Spaso, external rotation, and Milch were significantly more effective than Stimson. The FARES technique was rated as the least painful.

Editor's comments: The number of cases for each method was not large enough to evaluate the safety of each technique, and age restrictions for the included studies limits its extrapolation to pediatric patients. As shoulder dislocations are unlikely to be presentations that many UC providers face regularly, this study gives guidance toward the several best methods to become familiar with. ■

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Undertriaging of Children of Non–English-Speaking Parents

Take-home point: Children accompanied by caregivers whose preferred language is something other than English were more likely to be undertriaged in this pediatric ED-based study.

Citation: Rojas C, Chamberlain J, Cohen J, et al. Undertriage for children with caregivers preferring languages other than English. *Pediatrics.* Epub ahead of print May 16, 2023.

Relevance: Equitable care is an issue especially among non–English-speaking patients and parents. The under-

estimation of acuity at triage in UCCs and EDs can result in delays in care.

Study summary: This was a retrospective cross-sectional study of visits for patients at two pediatric EDs in the U.S. Patients with a documented caregiver-preferred language in the electronic health record were included in the study.

The authors defined undertriage as encounters in which the patient was assigned an Emergency Severity Index (ESI) score of 4 or 5 and subsequently required hospital admission or significant ED resources, including nebulizer treatments, supplemental oxygen, or intravenous (IV) placement. An additional indicator of undertriage was defined as patients with an ESI score of 4 or 5 who returned to the ED within 14 days and required admission.

The authors found that 124,775 patients were triaged as an ESI of 4 or 5, of which 114,266 (91.6%) had a preferred language documented for analysis. They found that 80.2% had caregivers who preferred English, 19% had caregivers who preferred Spanish, and 0.8% had caregivers who preferred any of 47 other languages. Children of caregivers preferring non-English languages were significantly more likely to be inappropriately triaged (under-

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triage rate 3.7% (English) vs 4.6% (Spanish) vs 5.9% (other languages)). The most common diagnosis categories for undertriaged visits, including return visits within 14 days, were skin and soft tissue pathology, other gastrointestinal pathology, unspecified viral infections, upper respiratory pathology, and asthma.

Editor’s comments: Parental English fluency may be less relevant for older children who may themselves be fluent in English. There was no comment in the study regarding whether interpreters were used in these encounters. Regardless, this is an important reminder that language barriers present obstacles to safe and equitable care and such cases require increased vigilance on the part of clinicians. ■



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