ABSTRACTS IN URGENT CARE

- Duration of UTI Treatment in Men
- Acute Respiratory Illness in Children
- Isopropyl Alcohol for Acute Nausea in Adults
- Neurological Events and Metronidazole Prescribing
- Do the Modified Sgarbossa Criteria Offer Advantages Over the Original?
- Safety of a Second COVID-19 Vaccination Dose in Patients Who Had a Reaction to the First

IVAN KOAY, MBCHB, FRNZCUC, MD

How Long Should We Treat UTI in Men?

Take-Home Point: In afebrile men with UTI symptoms, a 7-day course of ciprofloxacin or trimethoprim/sulfamethoxazole was noninferior to a 14-day course.

Citation: Drekonja D, Trautner B, Amundson C, et. al. Effect of 7 vs 14 days of antibiotic therapy on resolution of symptoms among afebrile men with urinary tract infection. *JAMA*. 2021;326(4):324-331.

Relevance: Given the significant risk of adverse events related to longer courses of antibiotics, prescribing the shortest effective course of antibiotics is important for patient safety.

Study summary: This was a double-blind, randomized, placebo-controlled trial conducted at two U.S. Veterans Affairs (VA) medical centers. Male patients with UTI symptoms such as dysuria, frequency of urination, urgency of urination, hematuria, costovertebral angle tenderness, or perineal, flank, or suprapubic pain were treated with either 7 or 14 days of ciprofloxacin or trimethoprim/sulfamethoxazole. All participants initially had an antibiotic prescribed by their treating clinician for 7 days then continued antibiotic therapy or placebo for days 8 through 14 of treatment, depending on their randomization group. These antibiotics were chosen because they accounted for 90% of the antimicrobials used in this situation for treatment within the VA system. A urine culture was not required for enrollment, although it was encouraged in institutional clinical guidance. From a study population of 272 participants, symptom resolution occurred in 91.9% of participants in the 7-day group vs 90.4% in the 14-day group, meeting the noninferiority criterion. Recurrence of UTI symptoms was not significantly different between the 7-day group (9.9%) vs the 14-day group (12.9%).

Editor's note: There were several limitations to the study. The choice of antibiotics was limited to ciprofloxacin or trimethoprim/sulfamethoxazole. The homogeneous population of participants (ie, older men) within the VA system only and the potential that some participants may not have had a UTI were also limitations. These results cannot be applied to female patients because the sites within the urinary tract of infection are generally distinct (eg, prostatitis vs cystitis). ■

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.

Antibiotic Prescribing in Children with Acute Respiratory Illness Presenting to the ED

Take-home point: The use of rapid respiratory pathogen (RRP) testing did not reduce the rate of antibiotic prescribing to children presenting with acute respiratory illness in this study.

Citation: Rao S, Lamb M, Moss A, et al. Effect of rapid respiratory virus testing on antibiotic prescribing among children presenting to the emergency department with acute respiratory illness: a randomized clinical trial. *JAMA Netw Open*. 2021;4(6):e2111836.

Relevance: Antimicrobial stewardship is a perennial challenge for UC/ED clinicians. It is unclear the value in affecting management.

Study summary: This was a single-center, randomized prospective trial based in a large pediatric ED. Participants included in the study were those triaged as category (ESI) 3 to 5 who were deemed stable and did not require clinician evaluation within 30 minutes of arrival. All participants underwent nasopharyngeal aspirate testing for RRP. Results of the test were

made available to the treating clinicians for those in the intervention group and not to the clinicians for those in the control group. Pathogens evaluated for this study included adenovirus, coronaviruses HKU1, NL63, 229E, and OC43, human metapneumovirus, rhinovirus/enterovirus, respiratory syncytial virus, influenza A, A/H1-2009, A/H3, and B, parainfluenza virus 1, 2, 3, and 4, *Bordetella pertussis* and *B parapertussis*, *Chlamydophila pneumoniae*, and *Mycoplasma pneumoniae*.

The authors found that of the 908 children recruited, those in the intervention group were more likely to receive antibiotics than children in the control group (relative risk [RR], 1.31; 95%CI, 1.03-1.68) and to have a diagnosis for which antibiotics would be indicated (risk difference, 8.6; 95%CI, 3.2-13.8). Secondarily, there were no significant differences in antiviral use, ED length of stay, recurrent ED visits, or hospitalization. In the intention-to-treat analysis, children whose clinician knew the RRP test results were more likely to receive antivirals (RR, 2.6; 95%CI, 1.6-4.5), be admitted to the hospital from the ED (RR, 1.8; 95% CI, 1.4-2.5), and have longer ED length-of-stay (RR, 1.6; 95%CI, 1.5-1.7).

Editor's note: This was a single academic center study. The study was underpowered to detect a difference in per protocol analyses; this was corrected for statistical purposes by the authors with a modified intention to treat analysis. ■

Inhalation of Isopropyl Alcohol for Treatment of Acute Nausea in Adults

Take-home point: Inhaled isopropyl alcohol (IPA) was more effective than placebo in the treatment of nausea and vomiting in adults in this study.

Citation: Candemir H, Akoglu H, Sanri E, et. al. Isopropyl alcohol nasal inhalation for nausea in the triage of an adult emergency department. *Am J Emerg Med*. 2021;41:9-13.

Relevance: Being able to treat patients rapidly for severe nausea prior to clinician evaluation with a rapid-acting and safe agent would be of great utility in urgent care practice.

Study summary: This was a prospective, double-blinded, randomized controlled study conducted in a single academic center ED in Turkey. Patients presenting to triage with nausea and vomiting and that were eligible were randomized to receive pharmacy-prepared gauze soaked in IPA or saline (placebo) to inhale. A numerical rating scale (NRS) was taken at the initial point and then subsequently at 2-, 4- and 10-minutes post intervention, with physicians allowed to use rescue antiemetics after 10 minutes. The authors recruited 118 patients (62 IPA and 56 placebo groups). They found significantly decreased intensity of nausea on the NRS with IPA use compared with placebo. There was a reduction in the mean NRS scores at 10 minutes in the IPA compared with placebo (2.7 v 0.9) with a higher percentage of patients in the placebo group requiring rescue antiemetic treatment (74.1% vs 44.3%), both statistically significant (p=0.008 and 0.004).

Editor's note: This was a single-center study conducted in Turkey. There was no longer-term follow-up after the initial 10 minutes, nor any comment regarding recurrence of the symptoms postdischarge from the study protocol. ■

Neurological Events Associated with Metronidazole Prescribing

Take-home point: Metronidazole is associated with an increased risk of adverse peripheral and central nervous system events.

Citation: Daneman N, Cheng Y, Gomes T, et al. Metronidazole-associated neurologic events: a nested case-control study. *Clin Infect Dis*. 2021;72(12):2095-2100.

Relevance: Metronidazole is one of the most common antibiotics prescribed in the urgent care setting; it is important for UC providers to be aware of potentially serious adverse reactions, even if they are relatively rare for commonly prescribed medications.

Study summary: This was a retrospective population-based nested case-control study involving older adults (>65 years) in Ontario, Canada. Cases were evaluated based on the receipt of metronidazole or clindamycin (control population) in the previous 100 days and who subsequently presented with peripheral or central neurological events. During the 14-year period of analysis, the authors found that a total of 1,212 out of 74,839 patients exhibited acute neurological events (encephalopathy, cerebellar dysfunction, or peripheral neuropathy) after exposure to metronidazole. These events were associated with an increased odds of metronidazole exposure compared with clindamycin (OR, 1.72 [95% CI, 1.53–1.94]). The incidence of neurological events following administration of metronidazole was 0.25%, which was on par with incidence of other serious antibiotic-adverse events that have prompted warnings from the Food and Drug Administration. The authors recommend reporting metronidazole-associated neurological events to the federal authorities.

Editor's note: This study was limited to older adults with no representation for younger patients. The indications for use of clindamycin, the comparative antibiotic, are different to metronidazole. ■

EKG Diagnosis of AMI in Ventricular Paced Rhythm

Take-home point: The modified Sgarbossa criteria (MSC) is more sensitive than the original Sgarbossa criteria (SC) for the diagnosis of ST-elevation myocardial infarction (STEMI).

Citation: Dodd K, Zvosec D, Hart M, et al. Electrocardiographic diagnosis of acute coronary occlusion myocardial infarction in ventricular paced rhythm using the modified Sgarbossa criteria. *Ann Emerg Med*. 2021;S0196-0644(21)00249-3.

Relevance: Diagnosing AMI in patients with paced rhythms can be challenging. The Sgarbossa criteria can aid in identifying acute ischemia in this relatively common presentation; however, they were somewhat less sensitive than ideal.

Study summary: This was a was a multicenter, observational case control investigation based in 16 centers. Subjects were patients with ventricular pacemakers who presented with symptoms concerning for acute coronary syndrome (ACS). They were compared with other patients presenting to the ED with ACS symptoms. The patients were then subdivided based on angiography findings to an occlusive MI (OMI) group, non-occlusive MI group, and a no occlusion control group. The MSC proposed alterations are:

1. Concordant ST elevation ≥1 mm in ≥1 lead
2. Concordant ST depression ≥1 mm and applicable in leads V1-V6
3. Discordant STE in ≥1 lead anywhere with ≥1 mm STE, as defined by ≥25% of the depth of the preceding S-wave

The authors found that of the 149 patients recruited, 59 met the OMI criteria. In the diagnosis of OMI in ventricular paced patients, sensitivity of MSC was 89% compared with 56% in SC. The specificity of the MSC was lower for patients in the nonocclusion myocardial infarction group compared with the no-occlusion myocardial infarction group

Editor's note: This study was limited by its retrospective design. The modified Sgarbossa criteria, like the initial Sgarbossa criteria, seem to primarily have value in their high specificity (ie, useful for ruling-in STEMI). While the modified Sgarbossa criteria have better sensitivity than the initial criteria, in this study they still lack sufficient sensitivity to rule out ACS definitively in the setting of LBBB/paced rhythms. ■

How Safe Is Receipt of a Second mRNA Vaccination After Reaction to First Vaccination?

Take-home point: Most patients who had an initial reaction to the first mRNA COVID-19 vaccine tolerated a second dose without any serious events.

"Recommending antihistamine premedication may provide some additional benefit as well as psychological comfort for both clinicians and patients after having an adverse reaction after initial vaccination."

Citation: Krantz M, Kwah J, Stone C, et al. Safety evaluation of the second dose of messenger RNA COVID-19 vaccines in patients with immediate reactions to the first dose. *JAMA Intern Med*. 2021;e213779.

Relevance: Getting the entire eligible population vaccinated is crucial in the fight against COVID-19. Patient safety in this process is also essential to ensuring public confidence in vaccination efforts.

Study summary: This was a multicenter, retrospective study conducted by Massachusetts General Hospital, Brigham and Women's Hospital, Vanderbilt University Medical Center, Yale School of Medicine, and University of Texas Southwestern Medical Center. Subjects were patients who had an immediate allergic reaction to the Pfizer-BioNTech or Moderna vaccine, with symptom onset within 4 hours of the first dose, at least one allergic symptom, and referral for an allergy/immunology consultation with in-clinic or telehealth assessment. The authors found that of the 189 patients participating in the study, the most frequently reported first-dose reactions were flushing or erythema (28%), dizziness or light-headedness (26%), tingling (24%), throat tightness (22%), hives (21%), and wheezing or shortness of breath (21%), with 17% meeting the criteria for anaphylaxis. Eighty-four percent received a second dose, with antihistamine premedication given in 30% of patients. All 159 patients, including 19 individuals with first-dose anaphylaxis, tolerated the second dose. Twenty percent reported immediate and potentially allergic symptoms associated with the second dose that were self-limited, mild, and/or resolved with antihistamines alone.

Editor's note: This was a small retrospective study, but the absence of serious adverse events is reassuring. Recommending antihistamine premedication may provide some additional benefit as well as psychological comfort for both clinicians and patients after having an adverse reaction after initial vaccination. This study also provides further evidence that serious adverse reactions to either dose of the mRNA vaccines is very rare. ■