ABSTRACTS IN URGENT CARE

- Course of Antibiotics for Pediatric UTI
- Link Between Influenza and Myocardial Infarction
- Make the Most of Patient's Wait Times
- Cognitive Functional Therapy for Lower Back Pain
- Ultrasound for Diagnosing Pediatric Distal Forearm Fractures
- Long COVID-19 Symptoms – 2 Years On

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How Long Should We Prescribe Antibiotics for Pediatric UTI?

Take-Home Point: Children receiving 5 days of antibiotics for urinary tract infection (UTI) had a higher rate of treatment failure than children receiving 10-day courses. However, absolute treatment failure rates were low in both groups.

Citation: Zaoutis T, Shaikh N, Fisher B, et. al. Short-course therapy for urinary tract infections in children: the SCOUT randomized clinical trial. *JAMA Pediatr*. 2023 Jun 26; e231979.

Relevance: There have been recent studies and guideline changes supporting shorter courses of antibiotic treatment as noninferior to standard treatment for pneumonia and skin infections in children. Currently, however, similarly compelling noninferiority studies in pediatric UTI are lacking.

Study Summary: This was a multicenter, randomized, double-blind, placebo-controlled, noninferiority trial evaluating short-course (5 days) vs standard-course (10 days) oral antibiotic therapy for children exhibiting clinical improvement after the first 5 days of treatment in the U.S. Children 2 months to 10 years of age who were diagnosed with UTI were prescribed one of five frequently used antibiotics (amoxicillin-clavulanate, cefixime, cefdinir, cephalexin, or trimethoprim-sulfamethoxazole). Participants were randomized (1:1) to receive either an additional 5 days of the prescribed antibiotic (standard-course therapy) or 5 days of matching placebo (short-course therapy). To evaluate clinical outcomes, two in-person visits were performed between days 11-14 and 24-30. A symptom questionnaire was administered during each of these visits.

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Six hundred and-ninety three were randomized and enrolled in this study. Two of 328 children assigned to standard-course therapy (0.6%) and 14/336 children assigned to short-course therapy (4.2%) suffered treatment failure, defined as symptomatic UTI before first follow-up visit. Children receiving short-course therapy were more likely to have asymptomatic bacteriuria and a positive urine culture before the first follow-up visit as well. The number needed to treat (NNT) for standard-course therapy to prevent one recurrent UTI was 28.

Editor's Comments: Compliance data were not reported in this study, particularly over the initial 5-day period. It was additionally an unexpected finding that adverse events were no different between groups. Nevertheless, this well-designed study shows that treatment failure in outpatient treatment of children with UTI is relatively uncommon, with an NNT=28 to prevent one treatment failure. It is likely that further studies are necessary before treatment guidelines are changed, however, especially given similar rates of adverse events in the longer treatment duration group. ■

Is There a Link Between Influenza and Myocardial Infarction?

Take-Home Point: This retrospective, population study supports that influenza vaccination can reduce the risk of coronary events in older adults.

Citation: Streeter A, Rodgers L, Hamilton F, et. al. Influenza vaccination reduced myocardial infarctions in United Kingdom older adults: a prior event rate ratio study. *J Clin Epidemiol*. 2022 Nov;151:122-131.

Relevance: There have been suggestions influenza may increase the risk of myocardial infarction (MI) through suspected increase in systemic inflammatory response. Prior studies have supported increased overall mortality after influenza infection. This study focuses on the role of

vaccination in reducing the risk of cardiac events around the time of influenza infection.

Study Summary: This retrospective data extraction study used data from the United Kingdom Clinical Practice Research Datalink's Gold database for general practices linked to hospital episode statistics and mortality data from the Office of National Statistics. The data were analyzed over a 15-year period from 1997-2011. Patients were assigned to an "exposed" group if they had received the influenza immunization and the control group if they had not been vaccinated. The primary outcome was hospital admission for MI, defined by ICD-10 codes. Several statistical tools were used to mitigate confounding.

The authors found influenza vaccination was effective in reducing influenza, although the incidence of influenza remained stable (3%-4%) annually. There were reduced rates of MI among those after receiving influenza vaccination. Interestingly, the authors found that the influenza vaccine demonstrated a greater effectiveness against MIs than against influenza itself, across all years and for most years individually. In their subgroup analysis, they found no significant effect on the influenza outcomes detected due to the interaction between age and vaccination status.

Editor's Comments: The data collected were reliant on input from various healthcare providers and subject to potential variability in coding. Additionally, the standard limitations exist for retrospective epidemiologic studies. However, this offers additional motivating rationale to offer older adults who decline influenza vaccination. ■

How Can We Make the Most of Patients' Wait Times in the UC Center?

Take-Home Point: Value can be added to patient care by engaging, empowering, and educating the patient while waiting for care.

Citation: Mohammed A, Lockey S. Engaging, empowering and educating the waiting patient. *Emerg Med J.* 2023;40:525–527.

Relevance: In most busy urgent care centers, there will inevitably be a waiting period for patients. This study proposes a concept of care that transforms the waiting patient from a passive recipient of care to an active participant.

Study Summary: This was a proposed paper with new concepts for using patients' wait time to better effect, transforming what is traditionally viewed as onerous and wasted time into a more productive experience for patient benefit. The authors proposed this could be achieved through three steps: engaging, empowering, and educating the waiting patient.

The authors suggest patient engagement be accomplished by converting patients from passive recipients of care to active contributors in their own health. This could be achieved by providing information that would prevent important health needs from being ignored. Patient preferences can also be elicited if they are able to consult with family and friends waiting with them. Empowering the patient is proposed through enabling them to submit their history while waiting. This could create a clinician-friendly, formatted version of their presentation which would become part of the medical record. Additionally, this could confer the added benefit of improved patient flow and lower risk for clinician burnout by reducing the time taken for documentation. Finally, educational information relevant to the patient's condition could be provided directly to patients' smartphones while they are waiting.

Editor's Comments: The proposals in the paper are of the author's opinion and are not supported by any evidence. In the era of artificial intelligence, such technical innovations are well within reach. A looming pragmatic question remains: How would such changes be received by clinicians and patients? For example, many providers may bristle at the notion of a patient entering their own history. Patients may be resistant to completing additional forms. ■

Cognitive Functional Therapy for the Treatment of Lower Back Pain

Take-Home Point: Cognitive functional therapy (CFT) resulted in large and clinically important effects in both the short- and long-term outcomes for patients with chronic, disabling back pain.

Citation: Kent P, Haines T, O'Sullivan P, et al. Cognitive functional therapy with or without movement sensor biofeedback versus usual care for chronic, disabling low back pain (RESTORE): a randomised, controlled, three-arm, parallel group, phase 3, clinical trial. *Lancet.* 2023 Jun 3;401 (10391):1866-1877.

Relevance: Most cases of acute low back pain improve quickly over days to weeks, but up to 20%-30% of patients will progress to a state of chronic pain. This study investigates the role of CFT in treating patients with chronic low back pain and improving their quality of life and function.

Study Summary: This randomized, controlled, three-arm parallel group clinical trial was conducted through 20 primary

care physiotherapy clinics in Australia. CFT is a patient-centered approach that facilitates patients to self-manage by targeting pain-related cognitions, emotions, and behaviors that contribute to pain and disability. Participants were randomly assigned (1:1:1) to one of three intervention groups: usual care; CFT only; or CFT plus biofeedback. The primary outcome was pain-related physical activity limitation at 13 weeks measured by patient self-report using the Roland Morris Disability tool. Economic impacts were measured using quality-adjusted life-years (QALY).

Four hundred ninety-two patients were enrolled. One hundred sixty-four patients were randomly assigned to the CFT-only arm, 163 patients were assigned to the CFT plus biofeedback arm, and 165 to usual care. The authors found that the CFT-only and CFT-plus-biofeedback groups both had statistically significant and clinically important effects for the primary outcome of pain-related activity limitation at 13 weeks, compared with usual care. Those effects were sustained until the 52-week final follow-up, as well. Both interventions were cost-effective and resulted in larger QALY improvements compared to usual care.

Editor's Comments: Participants were not blinded to the interventions, and their results were self-reported, which could potentially lead to bias. No race/ethnicity data were collected or considered, which may limit generalizability. Chronic back pain is a leading cause of disability worldwide. CFT is a low-risk option that can be offered to patients. It's likely access to CFT treatment will be regionally variable and subject to socioeconomic effects. ■

Ultrasound for Diagnosing Pediatric Distal Forearm Fractures

Take-Home Point: Ultrasonography was noninferior to radiography in the outcome of physical function with no between-group differences in the occurrence of adverse events.

Citation: Snelling P, Jones P, Bade D, et. al. Ultrasonography or radiography for suspected pediatric distal forearm fractures. *N Engl J Med.* 2023; 388:2049-2057.

Relevance: Use of ultrasonography, both in the effort to reduce radiation exposure in children and as a solution to the shortage of radiology technicians, may be a viable option for UC providers' evaluation of many pathologies, including musculoskeletal injuries in the pediatric population.

Study Summary: This was a multicenter, open label, non-inferiority randomized controlled trial in Queensland, Australia. Pediatric patients 5-15 years of age who presented to the ED with an isolated, acute, clinically nondeformed, distal forearm injury with a suspicion for fracture were eligible. Randomization was done in a 1:1 ratio. Participants in the ultrasonography group underwent point-of-care ultrasonography (US) performed by a trained and credentialed ED practitioner. The primary outcome was physical function of the arm at 4 weeks, as measured with the use of the Pediatric Upper Extremity Short Patient-Reported Outcomes Measurement Information System (PROMIS) tool.

Two hundred seventy patients were enrolled. The authors found ultrasonography was noninferior to radiography at the 4-week follow-up. The primary outcome did not appear to be influenced by the probe frequency or the practitioner who performed the US. There were no significant between-group differences in the frequency of adverse events or unplanned returns to the ED. The authors noted that initial US reduced the number of participants who would have undergone radiography at their initial emergency department presentation, particularly among participants whose injuries were diagnosed as no fracture or a buckle fracture. Importantly, no clinically important fractures were missed.

Editor's Comments: The follow-up period for the study was short, potentially allowing long-term sequelae to be missed in some patients. The study was also restricted to a narrow age range as the PROMIS tool is not validated outside this age group. Method of suspected fracture treatment was not standardized, and this study did not evaluate for the effects of various forms of immobilization. While this is promising, US is a highly provider/user-dependent modality, and use for evaluation of bony injuries would require providers to undergo specific training and for US technology to be much more widely available in UC centers. ■

COVID-19

Long COVID-19 Symptoms – 2 Years On

Take-Home Point: Approximately 18% of unvaccinated individuals infected with SARS-CoV-2 were still reporting symptoms 24 months after infection.

Citation: Ballouz T, Menges D, Anagnostopoulos A, et al. Recovery and symptom trajectories up to two years after SARS-CoV-2 infection: population based, longitudinal cohort study. *BMJ.* 2023;381: e074425.

Relevance: Long COVID is a poorly understood phenomenon. As the virus has become less virulent, concerns over long COVID have become increasingly dominant for patients with COVID-19. A solid understanding of likely disease trajectory is important for UC providers who will likely continue to see patients with COVID-19 for the foreseeable future.

Study Summary: This analysis was based on the Zurich SARS-CoV-2 Cohort (ISRCTN14990068), an ongoing, population-based, prospective study of individuals with confirmed SARS-CoV-2 infection. Participants were recruited through the Department of Health of the canton of Zurich, which is notified of all diagnosed SARS-CoV-2 cases through mandatory reporting. Baseline questionnaire at enrollment included questions on socio-demographics, self-reported preexisting comorbidities (eg, hypertension, diabetes status, cardiovascular disease, respiratory disease, etc.), health status before infection, and details about the acute infection, including treatment and hospitalization. Follow-up questionnaires that included questions relating to symptoms and physical and mental health were completed at 2 weeks and months 1, 3, 6, 9, 12, 18, and 24 after infection.

Seven hundred seventy-six participants completed the 24-month follow-up questionnaire out of an initial 1,106 who initially agreed to enroll for the study. These were matched with 628 uninfected controls. The authors found 55.3% reported returning to their normal health status in less than a month after infection, and 17.6% reported recovery within 1 to 3 months. The percentage of symptomatic patients declined at each time interval. Approximately 18% reported COVID-19 related symptoms at 24 months. Patients were at higher risk of prolonged COVID symptoms if they were older and had premorbid fatigue or other chronic health conditions. Altered smell and taste, cognitive changes, dyspnea, and fatigue were the most common long-term symptoms.

Editor's Comments: This study was conducted only on patients who were not vaccinated for COVID. As >70% of Americans have been vaccinated, the relevance of these findings for counseling patients who present to UC with a new COVID-19 infection in 2023 is uncertain. Additionally, many patients presenting currently have had prior SARS-CoV-2 infections, which further distinguishes current COVID-19 patients from the Swiss patients in this study. Survey data and high loss to follow-up are additional limitations of this study. It seems the takeaway is that long COVID exists and those with chronic health conditions seem more likely to be affected. Additionally, the data from this study do suggest that patients with long COVID can expect sustained improvement in their symptoms over time, but an unfortunate minority may not fully return to their premorbid baseline. ■