



ABSTRACTS IN URGENT CARE

- Fever: To Treat or Not to Treat?
- Distinguishing Viral from Bacterial Conjunctivitis
- Scapular Fractures and Blunt Chest Trauma in Children
- Sterile vs Nonsterile Gloves for Laceration Repair
- Bronchiolitis Care: An Update
- Antibiotic Stewardship and Children
- Post Paxlovid Rebound

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What Are the Consequences of Treating Adult Fever?

Take-home point: Fever therapy in adults does not seem to affect the risk of death and serious adverse events.

Citation: Holgersson J, Ceric A, Sethi N, et al. Fever therapy in febrile adults: systematic review with meta-analyses and trial sequential analyses. *BMJ*. 2022;378:e069620.

Relevance: This paper attempts to determine whether treatment of a fever in adults, either with antipyretics or cooling, affects outcomes.

Study summary: This was a systematic review with meta-analysis investigating the evidence supporting fever therapy in relation to outcomes of mortality, adverse events, and quality of life in adult patients. The authors searched all relevant databases and included randomized clinical trials including adults diagnosed as having fever of any origin.

The authors found 3,273 publications matching their inclusion criteria, with 23 trials involving 5,140 patients included for final assessment. Eleven studies assessed different antipyretic drugs, 11 trials assessed physical cooling, and eight trials assessed the combination of antipyretic drugs and physical cooling.

Sixty-four percent of patients analyzed had an infectious etiology of fever. The researchers found that fever therapy did not affect the risk of death or serious adverse events in febrile adults whether the fever was related to infectious or noninfectious causes. There was insufficient evidence to confirm or re-

ject the hypothesis that fever therapy influences quality of life or nonserious adverse events.

Editor's comments: The predominant limitation of the study was the low level of evidence of the included trials. Given the pressure to treat fevers when they occur, this study provides some modicum of reassurance that doing so is unlikely to be harmful. ■

Does My Patient Have Bacterial or Viral Conjunctivitis?

Take-home point: Clinical findings suggestive of bacterial conjunctivitis include mucopurulent discharge and simultaneous otitis media, while those of viral origin include pharyngitis, preauricular lymphadenopathy, and contact with other individuals with conjunctivitis.

Citation: Johnson D, Liu D, Simel D. Does this patient with acute infectious conjunctivitis have a bacterial infection? The rational clinical examination systematic review. *JAMA*. 2022;327(22):2231-2237.

Relevance: Distinguishing viral from bacterial conjunctivitis remains a challenging prospect for many practitioners, which explains the high variance in prescribing ocular antibiotics in such cases.

Study summary: This systemic review and meta-analysis evaluated the prevalence of viral vs bacterial conjunctivitis in adults and children. The authors determined likelihood ratios (LR) for clinical findings which could help differentiate viral from bacterial etiologies. An OVID-MEDLINE literature review was performed to identify research enrolling patients with viral conjunctivitis, bacterial conjunctivitis, or both.

The authors screened 80 articles, ultimately including 32 in their meta-analysis. Multiple findings reached statistical sig-



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nificance in terms of ability to predict the etiology of conjunctivitis. They found certain clinical features associated with a higher likelihood of bacterial conjunctivitis, including mucopurulent ocular discharge (sensitivity 0.76, specificity 0.66, with a positive LR of 2.1) and concurrent otitis media (sensitivity, 0.24, specificity 0.91, and a positive LR of 2.5).

Regarding viral conjunctivitis, coexisting pharyngitis had a sensitivity of 55% to 58% and specificity of 89% to 94%, with a positive LR of 5.4 to 9.9. Preauricular lymphadenopathy had a sensitivity of 17% to 31% and a specificity of 93% to 94%, with a positive LR of 2.5-5.6. Contact with another person with conjunctivitis showed a sensitivity 18% and a specificity of 93%, with a positive LR of 2.5. Additionally, the prevalence of bacterial conjunctivitis in children was substantially higher than that of viral conjunctivitis, whereas viral conjunctivitis was more common in adults.

Editor’s comments: The meta-analysis was limited by a relatively small number of studies of relatively poor quality. None of the positive likelihood ratios reached a level where they could definitively rule-in a bacterial etiology. No reported findings could clinically exclude bacterial conjunctivitis with sensitivity reasonable to assure a viral etiology. ■

Scapular Fractures Following Blunt Chest Trauma in Children

Take-home point: Pediatric scapular fractures are rare and are often associated with other intrathoracic injury.

Citation: Fonacier F, Chan H, Ugalde I. Pediatric scapular fractures and associated injuries following blunt chest trauma. *Am J Emerg Med.* 2022;52(2022):196–199.

Relevance: Scapular fractures are rare after chest trauma in children, but when discovered should prompt urgent care providers to consider referral to a trauma center given the significant likelihood of other serious associated injury.

Study summary: This was a retrospective cohort study from the study site’s trauma registry, a tertiary pediatric trauma hospital in the United States. Cases involving more than 12,000 pediatric patients were analyzed. Of those, 1,405 patients had both chest x-ray and CT. The primary outcome was the presence of scapular fractures, while secondary outcomes were the presence of other concurrent intrathoracic injuries (eg, pulmonary contusion/atelectasis, pneumothorax, hemothorax, rib fracture, other fracture, vascular injury, mediastinal injury, diaphragm rupture). The authors identified 60 patients with scapular fractures; 73.3% were scapular fractures noted on CT only (and missed on chest x-ray). Of this group, scapular fracture was the only isolated injury in just 4.5% of patients. The most com-

“Pressure from the parent, travel, and prolonged or atypical symptoms were frequently cited reasons for prescribing antibiotics in cases of URI.”

mon associated injuries were other fractures, lung contusion, and pneumothorax. The majority of the scapular fractures occurred in the scapular body (61%), followed by the coracoid process (20%), scapular spine (13%), and acromion process (6.6%).

Editor’s comments: Scapular fractures made up only 0.5% of all pediatric blunt trauma noted in these institutions. The use of CT scan to diagnose scapular fractures in the study limits its generalizability to most UC operations. Nevertheless, the high rate of associated thoracic injuries should prompt concern for more serious mechanism and highlight the need for higher level of care when x-ray identifies a scapular fracture. ■

Do We Need a Sterile Setup for Laceration Repair?

Take-home point: In this large, multicenter randomized controlled trial, no reduction in wound infection rate was observed with the use of sterile gloves and dressings.

Citation: Zwaans J, Raven W, Rosendaal A, et al. Non-sterile gloves and dressing versus sterile gloves, dressings, and drapes for suturing of traumatic wounds in the emergency department: a non-inferiority multicentre randomised controlled trial. *Emerg Med J.* 2022;39:650–654.

Relevance: Sterile gloves and dressings have been traditionally used for wound repair because of a theoretical concern for increased risk of wound infection with the use of nonsterile materials. Prior studies have failed to validate this practice.

Study summary: This was a multicenter, single-blinded, emergency department-based randomized controlled trial in the Netherlands, designed to evaluate for noninferiority of non-sterile gloves and dressings vs sterile gloves, dressings, and drapes for suturing of traumatic wounds. A simple 1:1 randomization was used without any stratification factors. Materials used in both protocols included chlorhexidine for disinfection, lidocaine 1% for anesthesia, sterile sutures (Ethilon nylon suture size 3.0 to 6.0 and Vicryl 3.0 to 5.0), and sterile instruments. Differing arms of the study were the use of sterile vs nonsterile dressings and gauzes, boxed gloves, and the use of sterile (fenestrated) drapes in the sterile protocol only. The primary outcome was wound infection.

The authors recruited 1,480 patients within the sterile

(n=747) or nonsterile (n=733) groups. Wound infection rates in the sterile treatment group were 6.8% (95% CI 4.0% to 7.5%) vs 5.7% (95% CI 5.1% to 8.8%) in the nonsterile treatment group. More infected wounds were located on the lower extremity (20.2% vs 12.2%) and patients were more likely to be using immunosuppressants (6% vs 1.5%).

Editor’s comments: Although interesting results were noted, the study was halted earlier than expected and underpowered for demonstrating noninferiority as planned. However, this was a large, multicentered study with very similar rates of infection between sterile and nonsterile setups. This corroborates prior studies which have failed to show a benefit of using sterile gloves. The role of other elements of sterile technique such as hand scrubbing, masks, caps, gowns were not investigated. ■

Updates in Bronchiolitis: Supportive Care Alone Is Still Best

Take-home point: The primary treatment options for bronchiolitis remain supportive care and selective use of hydration and oxygen in dehydrated or hypoxic infants.

Citation: Dalziel S, Haskell L, O’Brien S, et al. Bronchiolitis. *Lancet*. 2022;400(10349):392-406.

Relevance: Despite evidence that supportive measures should be the mainstay of treatment for bronchiolitis, providers continue to pursue infective treatment strategies, including the use of steroids and bronchodilators.

Study summary: This was a review of literature regarding present knowledge regarding bronchiolitis, its pathophysiology, clinical presentation, assessment, diagnostic investigation, and therapeutic management. The authors searched the Cochrane Database for systematic reviews and PubMed for scientific articles in English only.

Bronchiolitis typically affects infants and young children presenting with signs of respiratory distress and lower respiratory tract infection and is diagnosed clinically after a typical viral prodrome. Serious bacterial infections associated with bronchiolitis are rare. Routine testing of urine, viral swabbing, blood, and imaging is not recommended. Supportive care with hydration and respiratory support are the foundations of bronchiolitis management. The authors found no evidence supporting a benefit of epinephrine or inhaled bronchodilators (eg, albuterol) in reducing either hospital admissions or length of stay for hospitalized patients. There was no evidence of benefit of oxygen in infants with bronchiolitis without hypoxemia. There was no reduction in hospital admissions with corticosteroids. There was also no clear clinical benefit of antivirals when prescribed.

Editor’s comments: There continues to be ambiguity around the definition for bronchiolitis, as it relies on clinician assessment. Regardless, bronchiolitis continues to be a disease in which testing and therapies outside of clinical assessment and standard supportive measures fail to affect outcomes. ■

Pediatric Urgent Care Providers’ Approach to Antibiotic Stewardship

Take-home point: Parental expectation of receiving an antibiotic prescription is the most common barrier to appropriate prescribing.

Citation: Hamdy R, Nedved A, Fung M, et al. Pediatric urgent care providers’ approach to antibiotic stewardship: a national survey. *Pediatr Emer Care*. 2022;38: 1446-1448.

Relevance: Treatment of pediatric patients can be challenging. Appropriate antibiotic prescribing requires balancing the health needs of the child and the expectations of the parents.

Study summary: This was part of an ongoing quality improvement project aimed to reduce inappropriate antibiotic prescribing by the Society for Pediatric Urgent Care, the Antibiotic Resistance Action Center at the George Washington University Milken Institute School of Public Health, the Office of Antibiotic Stewardship of the Centers for Disease Control and Prevention, and Children’s Mercy Hospital Kansas City. A pre-implementation survey of pediatric urgent care providers was done and reported in this paper.

The authors reported 99.3% (156 of 157) participant responses to the survey from 23 sites nationally. Of those, 73% were from board-certified general pediatricians. Fifty-three percent of respondents reported that their urgent care center provided guidelines for prescribing antibiotics for acute respiratory tract infections. Sixty percent reported prescribing antibiotics for the treatment of nonspecific upper respiratory infections in fewer than 10% of cases. Pressure from the parent, travel, and prolonged or atypical symptoms were the next most frequently cited reasons for prescribing antibiotics in cases of URI. Ninety-eight percent of respondents agreed or strongly agreed that antibiotic stewardship interventions are important for optimizing antibiotic use in urgent care. Provider continuing education (83%) and published local guidelines (80%) were the most frequently reported strategies to improve antibiotic prescribing practice.

Editor’s comments: This was a small survey-based study, but it is most noteworthy for actually surveying urgent care clinicians. The findings should come as no surprise to anyone who works in urgent care. The findings support the perceived need to improve parent education, provider education, and prescribing guidelines. ■



COVID-19 Abstract

Virologic Rebound Following Paxlovid Treatment

Take-home point: Virologic rebound after nirmatrelvir-ritonavir (Paxlovid) therapy for early stage COVID-19 infection is associated with high viral load and culturable virus.

Citation: Boucau J, Uddin R, Marino C, et al. Characterization of virologic rebound following nirmatrelvir-ritonavir treatment for COVID-19. *Clin Infect Dis.* 2022;ciac512.

Relevance: With the introduction of medications to treat COVID-19, it becomes more likely that UC providers will see complications associated with these therapies.

Study summary: This was a subset case report of seven individuals who were part of the Post-vaccination Viral Characteristics Study (POSITIVES) cohort—a longitudinal study of individuals with COVID-19 infection. The subjects were ambulatory individuals treated within 5 days of symptom onset with nirmatrelvir-

ritonavir and who experienced recurrent symptoms after initial resolution or recurrent antigen test positivity after testing negative. Medical chart review for initial COVID-19 diagnostics and nirmatrelvir-ritonavir treatment course, home-based rapid antigen test results, and past medical history, including the presence of immunosuppressing conditions were recorded.

All seven participants were fully vaccinated and had received at least one booster dose. All seven reported symptom improvement and conversion to negative home-based antigen testing following treatment. Six participants had symptom recurrence, and one had repeat antigen test positivity during an asymptomatic screen. Symptoms recurred a median of 9 days after initial positive test, or 4 days after completion of treatment. Virologic rebound after treatment was associated with high viral load and, in a subset of individuals, culturable virus.

Editor’s comments: This was a very small case series; therefore, precise estimates of culture positivity, duration of viral shedding, or incidence of drug resistance cannot be made. The risk of recurrent COVID symptoms with nirmatrelvir-ritonavir use cannot be ascertained from this small, nonrandomized study, but it is a phenomenon worth counseling patients about as a possibility. ■



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