



## ABSTRACTS IN URGENT CARE

- Oral or IV Antibiotics for Cellulitis?
- Increasing the Cure Rate for Cutaneous Abscesses
- Children with Minor Abdomen Trauma
- Think Twice Before Skipping a Pelvic Exam
- Rebound Nasal Congestion

■ JOSHUA RUSSELL, MD, MSC, FAAEM, FACEP

### Rethinking IV Antibiotics for Cellulitis

**Key point:** *Oral antibiotics are noninferior to parenteral antibiotics for uncomplicated cellulitis. Erythema of cellulitis commonly expands somewhat, even if treated with appropriate antibiotics, for the first 1-2 days after starting treatment.*

**Citation:** Aboltins CA, Hutchinson AF, Sinnappu RN, et al. Oral versus parenteral antimicrobials for the treatment of cellulitis: a randomized non-inferiority trial. *J Antimicrob Chemother.* 2015;70(2):581-586.

Patients with cellulitis are often referred from urgent care to the emergency department for “IV antibiotics.” This practice is based on the common belief, dogma even, that IV antibiotics are somehow more potent and effective. The investigators in this study wanted to assess the validity of this assumption. Their results are compelling and cast serious doubts on this line of thinking.

The researchers randomized 47 patients referred to an Australian ED for extremity cellulitis to receive either IV (cefazolin) or PO (cephalexin) antibiotics. Importantly, they included patients with fever and diabetes. Patients with concerns for severe sepsis and/or necrotizing fasciitis were excluded. The outcome of interest was time to cessation of advancement of cellulitis. Rates of pain at 7 and 28 days post initiation of treatment and treatment failures were also measured.

Both groups showed progression of erythema for 1-2 days after initiation of treatment. The mean time required for erythema to stop spreading was 1.29 days in the oral antibiotic group vs 1.78 days in the IV antibiotic group. Treatment failure

was relatively rare (<25%) in both groups. A higher rate of treatment failure actually was observed in the IV antibiotic group; however, this difference was not statistically significant.

While patients with significant cellulitis are commonly sent from urgent care to the ED, and often even admitted to the hospital for IV antibiotics, this practice probably doesn't improve patient-centered outcomes and certainly adds to cost and risk for iatrogenesis. Cellulitis certainly can look scary. However, in reliable patients who can follow up or return if clinically declining and who do not appear to have necrotizing fasciitis or sepsis with extremity cellulitis, starting with a trial of oral antibiotics, even in severe cases, is a reasonable, safe, and effective treatment strategy. ■

### The Latest on PO vs IV Antibiotics and Cellulitis

**Key point:** *Presence of tachypnea, chronic skin ulcers, history of MRSA infection, and prior cellulitis in the preceding year were associated with failure of oral antibiotics for cellulitis. Patients with these features should be warned they may require more aggressive therapy.*

**Citation:** Yadav K, Suh KN, Eagles D, et al. Predictors of oral antibiotic treatment failure for nonpurulent skin and soft tissue infections in the emergency department. *Acad Emerg Med.* 2019;26(1):51-59.

The vast majority of patients with cellulitis can be diagnosed clinically and treated adequately with oral antibiotics. Occasionally, however, patients may fail to improve as quickly as desired with PO antibiotics alone.

In this retrospective chart review of 288 Canadian ED patients receiving oral antibiotics, the researchers explored which features of patients' histories and presentation were associated with failure of PO therapy. Treatment failure was defined as



**Joshua Russell, MD, MSc, FAAEM, FACEP** practices emergency and urgent care medicine, and manages quality and provider education for Legacy/GoHealth Urgent Care. Follow him on Twitter: @UCPracticeTips.

*“Even when available, CT imaging is undesirable in children without apparent serious injury due to the associated high dose of ionizing radiation.”*

admission or antibiotic change >48 hours after the initial visit.

In this study population, treatment failure occurred in 29.5% of patients. This is likely partially attributable to a sicker group of patients than we commonly see in urgent care because this was an ED-based study. The finding most predictive of failure of PO antibiotics was tachypnea at triage (odds ratio [OR] 6.31), followed by presence of chronic ulcers (OR 4.9), and history of MRSA (OR 4.83). History of cellulitis in the preceding year was also slightly predictive of PO antibiotic failure (OR 2.23).

Importantly, failing oral antibiotics was not associated with major adverse outcomes, but rather requiring a change in antibiotic and/or hospitalization. The odds ratios are relatively low for each identified risk factor for treatment failure, implying that many patients even with chronic skin ulcers, for example, will still respond well to PO antibiotics. However, the urgent care clinician should take a moment to warn patients about the slightly higher probability of needing more aggressive therapy if they have cellulitis and these risk factors for treatment failure. ■

### Is Getting the Pus Out Enough?

**Key point:** *Treatment with antibiotics in addition to incision and drainage increased the cure rate in patients with cutaneous abscesses.*

**Citation:** Gottlieb M, DeMott JM, Hallock M, Peksa GD. Systemic antibiotics for the treatment of skin and soft tissue abscesses: a systematic review and meta-analysis. *Ann Emerg Med.* 2019;73(1):8-16.

Antibiotics for abscesses: Should we or shouldn't we? The pendulum has swung back and forth on this issue with alarming frequency. In their 2014 guidelines, the Infectious Disease Society of America (IDSA) recommended I&D strongly for virtually all purulent skin infections, but systemic antibiotics only in select cases.

In this meta-analysis, the authors analyzed an impressive 2,406 patients with skin abscesses across four randomized controlled trials of I&D plus antibiotics or placebo. What they found was noteworthy. Patients treated with systemic antibiotics were 8.4% more likely to achieve clinical cure compared with I&D alone (NNT = 14). Patients treated with antibiotics were also less likely to develop new purulent skin infections (NNT = 10).

There was, however, a 4.4% increase in risk of adverse events in the antibiotic treatment group, as would be expected. Most adverse reactions were minor.

Finally, it is worth acknowledging that 49% of infections were due to MRSA, providing further evidence to support the practice of empirically covering for MRSA when choosing to use antibiotics for purulent skin infections. These data allow urgent providers to have a more informed risk/benefit discussion about the use of antibiotics after I&D in cases of cutaneous abscesses. ■

### Clearing the Belly in Kids with Blunt Trauma

**Key point:** *Use of the PECARN clinical decision rule can safely identify children at very low risk of clinically important intraabdominal injuries (CIAI) after blunt trauma.*

**Citation:** Springer E, Frazier SB, Arnold DH, Vukovic AA. External validation of a clinical prediction rule for very low risk pediatric blunt abdominal trauma. *Am J Emerg Med.* 2018; 50735-6757(18)30943-30944.

Children with minor trauma to the abdomen commonly present to urgent care centers. The caregivers of injured children generally seek reassurance that their child isn't seriously hurt. Previously, this reassurance has been difficult for clinicians to provide without obtaining labs and advanced imaging studies. However, the study of choice to exclude traumatic intraabdominal pathology is a CT scan, which is often not immediately available in the urgent care setting. Even when available, CT imaging is undesirable in children without apparent serious injury due to the associated high dose of ionizing radiation.

These investigators from the PECARN group sought to externally validate a previously derived rule which aimed to identify pediatric patients with blunt trauma at very low risk of clinically significant injury. They reviewed over 5,000 cases of children with blunt abdominal injury, among whom 133 had CIAI (defined as death or needing operative intervention or transfusion). Impressively, the decision rule correctly identified all but one case of CIAI, giving the rule a sensitivity of 99%.

The rule is likely to be of highest clinical utility in the urgent care patient population among patients who generally present after low-mechanism injuries and without significant pain or distress. In order for a patient to be considered very low risk they must have:

- GCS >13
- No evidence of abdominal wall trauma or “seatbelt sign”
- No abdominal tenderness
- No evidence of thoracic wall trauma
- No vomiting
- No decrease in breath sounds
- No spontaneous complaints of abdominal pain

In such patients, urgent care clinicians can now feel confi-

dent in offering reassurance to parents, without labs or imaging, that the likelihood of a serious abdominal injury is vanishingly small.

### Skip the Pelvic Exam? Not so Fast

**Key point:** *Addition of a pelvic exam did not improve the sensitivity, compared with history alone, in the evaluation of cervicitis and pelvic inflammatory disease (PID) in adolescent females. However, exam findings during pelvic exam altered management in a significant number of patients.*

**Citation:** Farrukh S, Sivitz AB, Onogul B, et al. The additive value of pelvic examinations to history in predicting sexually transmitted infections for young female patients with suspected cervicitis or pelvic inflammatory disease. *Ann Emerg Med.* 2018;72(6):703-712.

For a variety of reasons, there are few exams that are feared and avoided with as much fervor by patients and clinicians alike as the female pelvic exam, especially in the urgent care setting. Pelvic exams take time. Patients have to get undressed and positioned. You need to find a chaperone. Patients are anxious. Providers commonly try to talk themselves out of the necessity of doing a pelvic exam for these reasons. And now in the era of PCR and other DNA detection methods, there is further fodder for skepticism regarding the utility of pelvic exams.

Within this modern context, this group of researchers asked the question: What is the current utility and value of the pelvic exam? This was a single-site, prospective, observational study conducted in an academic pediatric emergency department on approximately 300 adolescent female patients presenting with vaginal discharge or lower abdominal pain. The providers (which were a mix of residents, fellows, attendings, and advanced practice providers) collected a history from each patient and estimated the likelihood of cervicitis and PID. The same providers then performed a pelvic exam and gave a second estimate of the likelihood of STI. The results were compared with urine testing for GC, chlamydia, and trichomonas.

Among this group of clinicians, the authors found that history alone had a sensitivity of 54% and specificity of 60% compared with history *plus* pelvic exam, which had a sensitivity and specificity of 48% and 61%, respectively. The rate of any STI in this population was 27%. Based on these results, they conclude that the routine performance of pelvic exam “should be reconsidered.”

This conclusion, however, should be taken with a large grain of salt. First, the gold standard for the presence of STI was based on urine testing, which has significantly lower sensitivity for the detection of sexually transmitted pathogens compared with vaginal and endocervical samples. Additionally, patients included in the study were only those complaining of lower abdominal pain and/or vaginal discharge. But patients with GC, chlamydia, and/or trichomonas may present with primarily

dysuria, abnormal bleeding, or no symptoms whatsoever. Finally, and most importantly, the authors note that findings on pelvic exam changed management in a whopping 25% of cases—far from useless.

This study does indeed highlight that pelvic exam findings alone do not add much to the sensitivity or specificity of a thorough history in the evaluation for cervicitis or PID. But it also demonstrates that examining the area of concern often changes clinical management. Unless there is a compelling reason to skip the pelvic (eg, absolute patient refusal), pelvic exam remains a clinically useful part of the evaluation of urogenital complaints, especially in sexually active young women. ■

### Greatest Hit of the Month: Just in Time for Allergy Season: A Simple Fix for Rebound Nasal Congestion Associated with Afrin?

**Key point:** *Short course fluticasone (Flonase) nasal spray appears to mitigate rebound nasal congestion associated with prolonged use of oxymetazoline (Afrin) nasal spray.*

**Citations:** Vaidyanathan S, Williamson P, Clearie K, Lipworth B. Fluticasone reverses oxymetazoline-induced tachyphylaxis of response and rebound congestion. *Am J Respir Crit Care Med.* 2010;182(1):19-24.

Morris S, Eccles R, Martez SJ, et al. An evaluation of nasal response following different treatment regimens of oxymetazoline with reference to rebound congestion. *Am J Rhinol.* 1997;11(2):109-115.

Ok, so admittedly this was a small study on healthy subjects, but the results are compelling enough to share. Oxymetazoline is among the most commonly used over-the-counter treatments for nasal congestion. Prior studies have shown that, while effective for immediate relief of congestion, rebound rhinitis symptoms commonly occur with prolonged use.

In this 2010 randomized, double blind, placebo-controlled crossover trial, 19 healthy volunteers received oxymetazoline nasal spray three times daily for 2 weeks. In all subjects, some degree of increase in nasal congestion at day 14 was observed compared with baseline. After 2 weeks of oxymetazoline use, participants were given fluticasone nasal spray (2 squirts in each nostril, twice daily) for an additional 3 days. Resistance to nasal airflow was measured before and after the additional 3 days of nasal steroid use.

Participants were found to have significant improvement in nasal airflow after the use of fluticasone, in most cases completely reversing the apparent rebound congestion caused by oxymetazoline. In patients using (and especially overusing) oxymetazoline for allergic rhinitis, consider adding a short course of fluticasone to minimize this side effect. Given the sheer quantity of patients we see in urgent care with seasonal allergy related complaints this time of year, this slight tweak could be a game changer. ■