



# ABSTRACTS IN URGENT CARE

- Longer-Term Antibiotic Treatment and Persistent Lyme Disease Symptoms
- In Children, the Greater the Exposure to Antibiotics, the Greater the Resistance to Them
- A Salmeterol-Fluticasone Combination Is Not Inferior to Fluticasone Alone in Treating Asthma
- Initial Pain Medication for Renal Colic
- Amiodarone Versus Lidocaine Versus Placebo for Cardiac Arrest Outside the Hospital Setting
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- Fluoroquinolone Does Not Increase Risk of Arrhythmia
- Smartphone Applications Do Not Provide Reliable Data on Tachycardia

■ SEAN M. MCNEELEY, MD

Each month the Urgent Care College of Physicians (UCCOP) provides a handful of abstracts from or related to urgent care practices or practitioners. Sean M. McNeeley, MD, leads this effort.

## Longer-Term Antibiotic Treatment and Persistent Lyme Disease Symptoms

**Key point:** *Longer therapy for Lyme disease is not helpful.*

**Citation:** Berende A, ter Hofstede HJ, Vos FJ, et al. Randomized trial of longer-term therapy for symptoms attributed to Lyme disease. *N Engl J Med.* 2016;374:1209–1220.

Lyme disease continues to be in the news because persistent symptoms after infection are of great concern. In a double-blind, placebo-controlled study, researchers gave antibiotics for an extended period to 280 patients with persistent Lyme disease symptoms, to determine whether symptoms would decrease more than in short-course therapy. All patients received ceftriaxone for 2 weeks and then either doxycycline, clarithromycin-hydroxychloroquine, or a placebo for 12 weeks. No difference in scores on the SF-36 (36-item Short Form Health Survey) physical-component summary was noted among the three groups, and no serious side effects or issues

were noted. These results appear to show either that persistent symptoms are not related to persistent disease or that persistent disease is not affected by these antibiotics. This information will help guide urgent care providers in choosing a treatment for patients with persistent disease. ■

## In Children, the Greater the Exposure to Antibiotics, the Greater the Resistance to Them

**Key point:** *Antibiotic resistance is related to prior antibiotic exposure in children.*

**Citation:** Russell G. Antibiotic resistance in children with *E coli* urinary tract infection. *BMJ.* 2016;352:i1399.

This two-part study looked at the global prevalence of antibiotic resistance in children with *Escherichia coli* infections of the urinary tract who had previous exposure to antibiotics. One part, a systematic review of 58 studies in 26 countries, analyzed resistance patterns, and the other part, a meta-analysis, examined the relationship between antibiotic exposure and resistance. Resistance was a significant issue, being as high as 53% for ampicillin and 24% for trimethoprim. Resistance in countries where antibiotics were available over the counter was significantly higher; the rate was 80% for ampicillin. Exposure to prescribed antibiotics also increased resistance. Although the study



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did not focus on the United States alone, the main concept likely holds: The greater the exposure to antibiotics, the greater the resistance. Urgent care providers should keep these findings in mind when deciding on antibiotic treatment as well as when counseling parents about when antibiotics are unnecessary. ■

### A Salmeterol-Fluticasone Combination Is Not Inferior to Fluticasone Alone in Treating Asthma

**Key point:** Adding salmeterol to fluticasone does not increase serious asthma events.

**Citation:** Stempel DA, Raphiou IH, Kral KM, et al. Serious asthma events with fluticasone plus salmeterol versus fluticasone alone. *N Engl J Med.* 2016;374:1822–1830.

There have been concerning findings from previous studies regarding serious adverse asthma events with salmeterol alone. This randomized, double-blind, placebo-controlled study investigated whether adding salmeterol to fluticasone propionate also increases the risk of serious adverse asthma events. More than 11,000 patients aged 12 years or older with at least one significant asthma exacerbation in the previous year were enrolled in the 26-week study. The end point was first serious event (death, intubation, or hospitalization). Serious adverse events were rare. There were 36 such events in the combination group and 38 in the fluticasone-only group. Serious asthma exacerbations occurred in 10% of the fluticasone-only group and only 8% in the combination group. The authors concluded that there was no increase in serious asthma events related to the addition of salmeterol and that there were fewer serious exacerbations in the combination group. These findings confirm for urgent care providers the safety of adding salmeterol, with a very modest decrease in asthma exacerbations. Hopefully we will see some longer-term studies in the future. ■

### Initial Pain Medication for Renal Colic

**Key point:** Injected nonsteroidal anti-inflammatory drugs are best for renal colic control in an acute-care setting.

**Citation:** Pathan SA, Mitra B, Straney LD, et al. Delivering safe and effective analgesia for management of renal colic in the emergency department: a double-blind, multigroup, randomised controlled trial. *Lancet.* 2016 Mar 15. doi: 10.1016/S0140-6736(16)00652-8. [Epub ahead of print.]

The authors of this report note there have not been many well-designed studies of the best type of initial pain medication for renal colic in the acute-care setting. Thus they conducted a randomized, controlled trial to compare the analgesic effect of diclofenac, paracetamol, and morphine for pain control. The primary outcome was the percentage of patients whose pain was reduced by 50% in 30 minutes. The participants were 1644

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adults in only one location in Qatar. Of them, 1316 were found to have renal colic. Pain relief compared to that for morphine was found to be significantly better in the diclofenac group but not the paracetamol group. Primary outcome measures did not differ much between groups: Pain relief was achieved in 68% of the diclofenac group, 66% of the paracetamol group, and 61% of the morphine group. Significant adverse events occurred more often in the morphine group (3%) than in the others (1% each). For the acute-care provider, these results are helpful in guiding the choice of anesthesia for patients with renal colic. Unfortunately, diclofenac, rather than ketorolac, was used; ketorolac is more commonly used in urgent care centers, at least in my experience. ■

### Amiodarone Versus Lidocaine Versus Placebo for Cardiac Arrest Outside the Hospital Setting

**Key point:** It is doubtful that amiodarone and lidocaine make a difference in out-of-hospital cardiac arrest.

**Citation:** Kudenchuk PJ, Brown SP, Daya M, et al; Resuscitation Outcomes Consortium Investigators. Amiodarone, lidocaine, or placebo in out-of-hospital cardiac arrest. *N Engl J Med.* 2016;374:1711–1722.

This randomized, placebo-controlled trial compared parenteral amiodarone, lidocaine, and saline placebo in 3026 patients with out-of-hospital cardiac arrest and shock-refractory ventricular fibrillation or pulseless ventricular tachycardia. Although the numbers trended slightly better for both medications compared with placebo, the difference was not significant. Perhaps the numbers, although large, were not large enough, considering the very low survival rate for patients who have had cardiac

arrest in any setting. There is some debate about these medications and whether urgent care centers should consider carrying them, because they are infrequently used and because emergency medical services have reasonable response times. Whatever the medication used, it is important to remember that good-quality cardiopulmonary resuscitation and early defibrillation are the most important life-saving treatments. ■

### Adhesive Strips in Two-Layer Wound Closures

**Key point:** *Adhesive strips appear to provide better aesthetics and patient satisfaction than sutures do.*

**Citation:** Yang S, Ozog D. Comparison of traditional superficial cutaneous sutures versus adhesive strips in layered dermatologic closures on the back—a prospective, randomized, split-scar study. *Dermatol Surg.* 2015;41:1257–1263.

In this prospective, randomized study, patients underwent an elliptical incision and repair with two layer closures. The wounds were split in two, and each half of the wound was then closed with either 4-0 polypropylene running sutures or one-quarter-inch Steri-Strip films. The wounds were compared at 2 weeks, 3 months, and 6 months. At 3 weeks, the wounds with adhesive strips had a superior appearance, which resulted in superior patient satisfaction. At 3 and 6 months, however, no difference was noted. Unfortunately, this study involved only 10 patients and focused on surgical wounds. The study's findings indicate that wounds that are closed with deep sutures may do well with adhesive-strip outside closure. Urgent care providers can discuss these findings with patients when deciding on wound-closure methods, as long as they also discuss the study's limitations. ■

### Fluoroquinolone Does Not Increase Risk of Arrhythmia

**Key point:** *A large new study shows no excess arrhythmia from oral fluoroquinolone use.*

**Citation:** Inghammar M, Svanström H, Melbye M, et al. Oral fluoroquinolone use and serious arrhythmia: bi-national cohort study. *BMJ.* 2016;352:i843.

Several reports have noted concern about an increased risk of arrhythmia in patients who take fluoroquinolone orally. The theory is that fluoroquinolones slow the potassium outflow from the heart muscle, potentially resulting in torsade de pointes. This large cohort study based in Sweden and Denmark looked at fatal and nonfatal arrhythmia in patients taking fluoroquinolone compared with those taking penicillin, within 7 days of starting the medication. The arrhythmia rate was actually higher in the penicillin group (3.4 vs. 4.0 per 100,000 patient-years). There were no significant differences in rates in any subgroups of fluoroquinolone types. For the urgent care

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provider, this is some evidence of safety, but a different study type would have been preferable. Further data are likely necessary for a final answer. ■

### Smartphone Applications Do Not Provide Reliable Data on Tachycardia

**Key point:** *Smartphone applications are not completely accurate in tachycardia evaluation.*

**Citation:** Wackel P, Beerman L, West L, Arora G. Tachycardia detection using smartphone applications in pediatric patients. *J Pediatr.* 2014;165:1133–1135.

It seems like everyone, including children, is using smartphone applications to measure heart rate. Thus, it would seem logical to use these tools to help diagnose pediatric arrhythmia. This study analyzed the accuracy of these applications in monitoring heart rate. Twenty-six patients with supraventricular tachycardia (SVT) had their heart rate tracked by Instant Heart Rate (app 1; Azumio, Palo Alto, California) and Heart Beat Rate (app 2; Bioziming, Montbonnot, France) and simultaneously by electrocardiography. These measurements were obtained during electrophysiology studies. At baseline, the applications worked well, within  $\pm 4$  bpm. During SVT, the applications failed to measure a heart rate in 11 of 21 attempts, and heart rates greater than 200 bpm were not very accurate. Variation was from +1 to -47 bpm. Considering that SVT usually occurs at rates greater than 200 bpm, this information may make these applications less helpful. Urgent care providers should exercise caution when using any of the applications, even when patients bring their results to the office. However, abnormal findings should not be ignored. ■