



# ABSTRACTS IN URGENT CARE

- Copeptin and Troponin Together Are Useful in Diagnosing Acute Coronary Syndromes
- Telemedicine Is Reliable for Assessing Illness Severity in Children
- Nonsteroidal Anti-inflammatory Drugs for Low Back Pain
- Low Socioeconomic Status Increases Risk of Methicillin-Resistant *Staphylococcus aureus* Infections
- Armadillos Have Carried Leprosy to the Southeastern United States
- Peripheral Blood Gene Expression Can Help Distinguish Viral from Bacterial Etiologies
- How to Get Physicians to Write Fewer Unnecessary Antibiotic Prescriptions
- Mindfulness Meditation Helps Decrease Back Pain

■ 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.

## Copeptin and Troponin Together Are Useful in Diagnosing Acute Coronary Syndromes

**Key point:** *There is a new tool for ruling out myocardial infarction.*  
Citation: Ricci F, Di Scala R, Massacesi C, et al. Ultra-sensitive copeptin and cardiac troponin in diagnosing non-ST-segment elevation acute coronary syndromes—the COPACS Study. *Am J Med.* 2016;129:105–114.

Concern about patients with non-ST-segment elevation myocardial infarction with chest pain and normal electrocardiogram (ECG) findings frequently causes a transfer to an emergency department (ED) or a prolonged ED stay. The authors in this noninferiority study compared troponin I serial testing with ultrasensitive copeptin and a single troponin I test in 196 consecutive patients presenting to an ED with nontraumatic chest pain and a nondiagnostic ECG findings. Levels of copeptin, also known as C-terminal pro-arginine-vasopressin, rise rapidly and then decrease. They concluded that the two-test method was

not inferior to serial testing. Although further study is needed, this new method does hold promise for urgent care. ■

## Telemedicine Is Reliable for Assessing Illness Severity in Children

**Key point:** *Telemedicine may be useful in assessing ill children.*  
Citation: Siew L, Hsiao A, McCarthy P, et al. Reliability of telemedicine in the assessment of seriously ill children. *Pediatrics.* 2016;137:1–6.

Telemedicine is an expanding field, and not much is known about the reliability of assessment with the platform compared with that of hands-on visits. This study consisted of two parts: assessing children aged 2 to 36 months with fever, and assessing those aged 2 months to 18 years with respiratory complaints. The goal was to see whether evaluation by tablet with camera (iPad and FaceTime) and in person resulted in similar scores on two grading scales. Febrile children were assessed with the Yale Observation Scale. Children with respiratory symptoms were assessed with the Respiratory Observation Checklist. The authors found significant agreement between telemedicine assessments and in-person assessments. For the urgent care provider who uses telemedicine, these findings are more evidence that at least an assessment of illness severity in children using this method can be considered reli-



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able. The findings do not address the diagnosis and treatment most common via these technologies, because most of these encounters are for low-acuity illness or injuries. Further study of telemedicine is definitely warranted. ■

### Nonsteroidal Anti-inflammatory Drugs for Low Back Pain

**Key point:** Nonsteroidal anti-inflammatory drugs help a little for back pain.

**Citation:** Enthoven WT, Roelofs PD, Deyo RA, et al. Nonsteroidal anti-inflammatory drugs for chronic low back pain. *Cochrane Database Syst Rev.* 2016;2:CD012087. doi: 10.1002/14651858.CD012087.

This Cochrane review assessed the benefit of nonsteroidal anti-inflammatory drugs (NSAIDs) as a group and as individual medications for low back pain. The study also looked at the effect of NSAIDs on disability scores. All individual drugs showed a similar slight benefit, but the level of evidence was low. Patients also showed minimally of decreased disability. Overall, the number of studies used was small (13), as was the number of participants. Considering the number of patients with back pain seen yearly (lifetime prevalence, 84%), the diversity of pain causes, and the variety of NSAIDs that can be given, it is difficult to draw strong conclusions from this review. In addition, the review also looked only at treatment of patients with chronic low back pain. For the urgent care provider, these findings are unlikely to cause changes in current practice. However, the review's limitations should be understood, because reports of this type frequently ignore limitations. ■

### Low Socioeconomic Status Increases Risk of Methicillin-Resistant *Staphylococcus aureus* Infections

**Key point:** Community-associated transmission of methicillin-resistant *Staphylococcus aureus* is a socioeconomic issue.

**Citation:** Tosas August O, Betley JR, Stabler RA, et al. Evidence for community transmission of community-associated but not health-care-associated methicillin-resistant *Staphylococcus aureus* strains linked to social and material deprivation: spatial analysis of cross-sectional data. *PLOS Med.* 2016;13:e1001944. doi: 10.1371/journal.pmed.1001944.

Authors in the United Kingdom looked at transmission of both community-acquired methicillin-resistant *Staphylococcus aureus* (ca-MRSA) infections and infections believed to be hospital-acquired (ha-MRSA). The authors speculated that ca-MRSA might have a higher burden on those in lower socioeconomic situations. As expected, they found almost no transmission of ha-MRSA in the community, but a reservoir does seem to remain in hospitals. The authors also found that there was a

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high risk of ca-MRSA in areas with overcrowding, homelessness, low income, and recent immigration to the United Kingdom. Infection and colonization appeared to be related to area of residence and overcrowding. It is likely that these factors are applicable to the United States as well as the United Kingdom, and therefore U.S. urgent care providers should consider them with regard to diagnosis and prevention of recurrence. Although socioeconomic status and overcrowding are not problems an urgent care provider can fix, helping patients understand how transmission occurs and helping them to prevent it should be part of treatment. ■

### Armadillos Have Carried Leprosy to the Southeastern United States

**Key point:** Leprosy is spreading via armadillos.

**Citation:** Sharma R, Singh P, Loughry WJ, et al. Zoonotic leprosy in the southeastern United States. *Emerg Infect Dis.* 2015;21:2127–2134.

Unfortunately there is bad news on the infectious-disease front: Leprosy is now present in the southeastern United States. According to the authors, nine-banded armadillos (*Dasypus novemcinctus*) naturally carry *Mycobacterium leprae* and have been blamed in zoonotic transmission of leprosy. Although it is rare in the United States (fewer than 200 cases per year, mostly from outside sources), almost 500,000 cases have been reported in the Western hemisphere since about 2005. In about one-third of leprosy cases, there was no exposure outside the United States. Leprosy is a chronic bacterial disorder that affects nerves, skin, and other tissues. It is still a clinical diagnosis and requires more than 2 years of medication to cure. Leprosy is thought to be transmitted between patients by direct contact

or infectious aerosols. However, more than 95% of individuals are genetically not susceptible to it. Previous reports found the disease in armadillos in Texas and Louisiana but not in other states. However, these authors found evidence of disease in the southeastern United States as well. This is one more disease that urgent care providers should keep in mind when patients present with unusual symptoms. ■

**Peripheral Blood Gene Expression Can Help Distinguish Viral from Bacterial Etiologies**

*Key point: New diagnostic tools provide hope for differentiating viral and bacterial causes.*

**Citation:** Tsalik EL, Henaio R, Nichols M, et al. Host gene expression classifiers diagnose acute respiratory illness etiology. *Sci Transl Med.* 2016;8:322ra11.

The difficulty of differentiating bacterial from viral etiologies in acute upper respiratory illness is part of the reason that significant amounts of antibiotics are prescribed. One of the many reasons for this is that viral and bacterial illnesses can co-occur. This study used peripheral blood gene expression to determine whether viral, bacterial, or noninfectious causes were present. The authors said that the study is the first of its kind using a large emergency department patient population (273 participants). This more consistent population would have patients representing all three causes, without the healthy patients used as comparison groups in previous studies. The researchers’ findings showed promise for peripheral blood gene expression compared with procalcitonin. This diagnostic tool is not yet available for use by urgent care providers, but findings about its efficacy provide hope for future ability to help determine the cause of upper respiratory illnesses. ■

**How to Get Physicians to Write Fewer Unnecessary Antibiotic Prescriptions**

*Key point: Some interventions do reduce the amount of unnecessary antibiotic prescriptions.*

**Citation:** Meeker D, Linder JA, Fox CR, et al. Effect of behavioral interventions on inappropriate antibiotic prescribing among primary care practices: a randomized clinical trial. *JAMA.* 2016;315:562–570.

Despite significant effort in health care to change minds, physicians still frequently prescribe antibiotics for illnesses that are not affected by antibiotics. This study looked at 49 primary-care providers’ prescribing habits for nonspecific upper respiratory infections, bronchitis, and influenza. The authors then provided three interventions: suggestion of alternative medications by the electronic medical record (EMR), accountable justification, and peer comparison. Accountable justification requested reasons for prescribing antibiotics for these diag-

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noses. Peer comparison entailed emails with rankings of providers by number of “inappropriate” prescriptions written. For those latter two interventions, prescription rates decreased from 5% to 7% more than for control participants. The providers did not seem to change their diagnosis pattern in order to justify antibiotics, such as recording a diagnosis of sinusitis or pneumonia instead of a diagnosis of sore throat or bronchitis. There was a significant increase in return visits, from 0.43% to 1.41%. Accountable justification and peer comparison did seem to be the cause of the change. Urgent care medical directors can use those two methods to help move providers toward compliance with current guidelines. ■

**Mindfulness Meditation Helps Decrease Back Pain**

*Key point: Mindful meditation is a treatment option for low back pain.*

**Citation:** Morone NE, Greco CM, Moore CG, et al. A mind-body program for older adults with chronic low back pain: a randomized clinical trial. *JAMA Intern Med.* 2016 February 22. doi: 10.1001/jamainternmed.2015.8033. [Epub ahead of print.]

Treating chronic low back pain in older adults is difficult. Narcotics and nonsteroidal anti-inflammatory drugs all cause significant problems that occur more frequently in older patients. The researchers in this single-blind, randomized clinical trial attempted to determine whether mindful meditation decreased pain and improved function in patients older than 65 years compared with individuals without pain. There were 140 individuals in the pain group and 142 in the pain-free group. The participants received 6 weeks of training and 6 monthly sessions. The intervention was modeled on the Mindfulness-Based Stress Reduction program; the control program was modeled on “10 Keys” to Healthy Aging. There was short-term improvement in function and sustained pain reduction. Mindfulness training is one more tool that the urgent care provider can use to guide the motivated patient to pain reduction. ■