



ABSTRACTS IN URGENT CARE

- UTI and renal scarring
- PAS scores for appendicitis
- WBC count and appendicitis
- Physician attire and infection control
- Outpatient care of diverticulitis
- Screening for colonoscopy and diverticulitis
- Guidelines for treatment of acute otitis media
- Time to wound closure and infection

■ 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 McNeeley, MD, leads this effort.

Prompt Treatment of Pediatric UTI Prevents Renal Scarring

Key point: *To avoid renal scarring, don't wait for urine culture in pediatric patients. Treat within 3 days.*

Citation: Coulthard MG, Lambert HJ, Vernon SJ, et al. Does prompt treatment of urinary tract infection in preschool children prevent renal scarring: Mixed retrospective and prospective audits. *Arch Dis Child.* 2013 Dec 18; [e-pub ahead of print].

Investigators in England looked at the relationship between time to treatment and renal scarring in two cohorts of patients in Newcastle. Comparison was made between a cohort in the 1990s and one in the 2000s, both composed of children younger than age 8. The two timeframes were chosen because of a change in the way children were triaged. Children in the more recent cohort were seen and treated sooner. The authors looked at time to treatment, time to referral, presence of scarring, and vesicoureteric reflux percentages. The 1990s cohort was retrospective and the 2000s cohort was prospective.

The results showed a reduction in scarring when treatment was initiated in less than 3 days. This study's design and complex statistics were probably less than ideal considering the strength of evidence. From an urgent care perspective, early treatment rather than wait and see what the culture grows should be considered when consistent symptoms or urinalysis are present. The negative from this perspective is the possibil-

ity of overuse of antibiotics. Further research, it is hoped, will better quantify the number needed to treat and number needed to harm when early antibiotics are provided. ■

PAS Scores for Appendicitis of Limited Use in Urgent Care

Key point: *Thoughtful use of an appendicitis score and necessary transfer to a hospital with ultrasound capacity may reduce unnecessary radiation.*

Citation: Saucier A, Huang EY, Emeremni CA, Pershad J.. Prospective evaluation of a clinical pathway for suspected appendicitis. *Pediatrics.* 2014;133(1):e88-e95.

Appendicitis is frequently a complex diagnosis and if missed, a common cause of litigation. Balancing the risk of missing the diagnosis with unnecessary radiation or transfer can be challenging. Investigators in this study attempted to supplement an appendicitis score with ultrasound to improve accuracy of diagnosis. The appendicitis score used was the Samuel score (PAS) reported in 2002. The following are each one point: anorexia, nausea/emesis, leukocytosis, left shift, and migration to right lower quadrant. The remainder worth two points are right lower quadrant (RLQ) tenderness to light palpation and tenderness at RLQ with cough, percussion, and heel tapping. Scores of 1 to 3 are considered negative and 8 to 10 are considered positive. The authors also used a neutrophil count >75% and a temperature of 38° C.

This study looked at patients aged 4 to 17 who presented to a tertiary care pediatric emergency room and were suspected of having appendicitis. They were then placed in three categories: negative (1-3), positive (8-10) or those with scores in the middle. As with this and the Alvarado score, the largest percentage of patients (61%) were left in the uncertain category. The remaining patients were screened by ul-



Sean McNeeley is an urgent care practitioner and Network Medical Director at University Hospitals of Cleveland, home of the first fellowship in urgent care medicine. Dr. McNeeley is a founding board member of UCCOP and vice chair of the Board of Certification of Urgent Care Medicine. He also sits on the *JUCM* editorial board.

trasound and defined as positive or negative. Positive patients were seen by Pediatric Surgery.

A total of 196 patients were correctly enrolled. Of those with a negative score, 0% were found to have appendicitis on follow up. PAS was found to be 81.5% sensitive and 71% specific. Adding ultrasound increased these values to 92% sensitivity and 95% specificity. From an urgent care perspective, the PAS overall may not be a very helpful method, considering that almost two-thirds of the patients fell into the indeterminate group. However, the performance of the score at the extremes may be helpful. Secondly, when transferring a patient, the ultrasound capacity of the receiving facility should be considered to help reduce the amount of unnecessary radiation. Approximately two-thirds of the group with intermediate PAS scores did not have appendicitis. ■

WBC Count Not Definitive for Appendicitis Diagnosis

Key point: *The best cut off for white blood cell count to rule out appendicitis is still debatable. Raising the number does decrease negative appendicitis surgery rate but it also decreases sensitivity.*

Citation: Bates MF, Khander A, Steigman SA, et al. Use of white blood cell count and negative appendectomy rate. *Pediatrics*. 2014;133(1):e39-e44

The investigators in this study attempted to find factors that may reduce negative appendectomy rates. The study was performed in a retrospective fashion and then confirmed in a prospective manner. After reviewing the patients with a negative appendectomy from previous surgeries, the researchers determined that the only consistent factor was the white blood cell (WBC) count elevation. They determined that raising the WBC count from 8,000 to 9,000 would reduce the normal appendix finding at time of surgery by more than half; however, it would also decrease sensitivity from 95% to 92%. The authors found this decreased sensitivity to be acceptable if patients between the two levels are observed, which is not usually possible in an urgent care setting. Considering that the negative appendectomy rate was already 2.6%, a loss of sensitivity of 3% in the screening function that urgent care centers provide for patients with possible appendicitis is a significant concern. ■

Consider Rolling Up Sleeves to Stem Infection

Key point: *Long sleeves and white coats, although commonly used in medical care, may be vectors of disease.*

Citation: Bearman G, Bryant K, Leekha S, et al. Healthcare per-

sonnel attire in non-operating-room settings. *Infect Control Hosp Epidemiol*. 2014;35(2):107-121.

As stated in the introduction of this article, attire of the physician is steeped in history and symbolism. Concern for the spread of hard-to-treat infections has led to discussion of physician attire. No definitive study about it has been done to date. This article attempts to look at the evidence for possible transmission of disease from health care workers' attire and consider it in light of the current traditions and patient expectations about how a physician should look. Unfortunately due to the lack of definite evidence, the GRADE or similar level of evidence system was not used. Although this document refers to hospital physicians, it is not hard to see how it could also apply to the physician's office or an urgent care center.

Suggestions included bare below the elbow (BBE) policies to avoid the possibility of disease transmission. BBE includes watches and rings. This recommendation was suggested on common-sense grounds alone. Considering white coats, the authors recommend house staff have at least two coats and a convenient method to launder them. They also suggested that a hook be placed for physicians to remove coats and other long-sleeved items before patient contact. Obviously not using white coats would be an alternative, but some facilities require them. Neckties also are frowned upon, but if necessary, should be secured so that patients do not come in contact with them. This article also reviews and comments on patient perception of physicians and their attire. The authors conclude that patients profess a preference for formal attire but when put to the test, attire does not seem to alter patient satisfaction or confidence in providers. ■

Support for Outpatient Care of Diverticulitis

Key point: *Outpatient therapy for selective diverticulitis patients is safe and effective. Unfortunately CT scan—which is not available to most urgent care clinicians—was used to define uncomplicated diverticulitis.*

Citation: Biondo S, Golda T, Kreisler E, et al. Outpatient versus hospitalization management for uncomplicated diverticulitis: A prospective, multicenter randomized clinical trial (DIVER Trial). *Ann Surg*. 2014;259(1):38-44.

Patients with diverticulitis occasionally present to urgent care centers. Although outpatient therapy for diverticulitis is offered by gastroenterologists and urgent care providers alike, it has not been well researched. The authors of this article attempted to find evidence for the safety and effectiveness of outpatient therapy in uncomplicated diverticulitis. The study was a parallel two-arm randomized, controlled trial. Patients who presented with abdominal pain and fever were diagnosed by

screening with plain films and then computed tomography (CT) scans. Those with uncomplicated diverticulitis (defined as pericolic phlegmon) were randomized to inpatient or outpatient therapy. Outpatient subjects were treated with 10 days of amoxicillin, clavulanic acid or ciprofloxacin/metronidazole, if penicillin allergic. Dietary instructions were given as 2 days of liquid diet advancing to low residue for the next few days as tolerated. Paracetamol was used for pain. Outpatients were called daily for 5 days by investigators.

Randomization included 132 patients. No difference in readmission or quality of life measures was noted between the groups. It is hoped that future studies without use of CT or that include patients with reoccurrence will help prove the safety of outpatient treatment for diverticulitis that is often provided in the urgent care setting. ■

Standard Colonoscopy May Apply for Uncomplicated Diverticulitis

Key point: *Patients with acute uncomplicated diverticulitis are no more likely to have cancer or precancerous lesions than a similar asymptomatic population and may be able to follow standard screening colonoscopy recommendations.*

Citation: Sharma PV, Eglinton T, Hider P, Frizelle F. Systematic review and meta-analysis of the role of routine colonic evaluation after radiologically confirmed acute diverticulitis. *Ann Surg.* 2014;259(2):263-272.

Once again, diverticulitis is the topic of an interesting article that may help to decrease medical costs without significant risks to patients. In the introduction, the authors note that diverticula may affect as many as 60% of patients living in industrialized countries. Diverticulitis may occur in as many as 25% of these individuals. In the past, colonoscopy was recommended because of concerns for malignancy and possible misdiagnosis. This meta-analysis reviewed studies from multiple industrialized nations of results of colonoscopy after an acute episode of diverticulitis. Once again, computed tomography (CT) scan was used to define patients with uncomplicated diverticulitis. The authors' definition was similar to the previous article as well, with colonic wall thickening and pericolic fat stranding only defining uncomplicated episodes.

The results of this complicated analysis were consistent with current expectations of colon cancer and precancerous lesions in an asymptomatic population. In other words their meta-analysis found no significant differences between the groups in risk of cancer. From the perspective of urgent care, where CT availability is infrequent, more study must be done to consider applying this to patients without the results of a CT scan. However, if a CT scan is available or performed elsewhere and the results are consistent with uncomplicated diverticuli-

tis, it appears that the risk of cancer or precancerous lesions is not increased. ■

New Guidelines Support Urgent Care Standard for Acute Otitis Media

Key point: *New guidelines will likely support the treatment typically used by urgent care providers for acute otitis media.*

Citation: Rosenfeld RM, Schwartz SR, Cannon CR, et al. Clinical practice guideline: acute otitis externa. *Otolaryngol Head Neck Surg.* 2014;150(1 Suppl):S1-S24.

New guidelines for the treatment of acute otitis externa in patients older than age 2 years were recently released by The American Academy of Otolaryngology – Head and Neck Surgery Foundation. This article is an update of the 2006 guidelines. The following are a few statements and recommendations:

- Hallmark sign is tenderness of tragus or pinna
- *Pseudomonas aeruginosa* and *Staphylococcus aureus* are the most common causes.
- Topical therapy should be first line if uncomplicated.
- Pain should be assessed and treated.
- Physician should ensure proper delivery with instruction or a wick if needed.
- If perforation is possible, medications prescribed should not be ototoxic.
- Failure to improve in 48 to 72 hours should trigger repeat evaluation.

Multiple Factors Impact Wound Infection Rates

Key point: *Time to closure may be less of a risk factor in wound closure than previously believed. Other factors appear to be more important and should be considered when determining need for prophylactic antibiotics.*

Citation: Quinn JV, Polevoi SK, Kohn MA. Traumatic lacerations: What are the risks for infection and has the 'golden period' of laceration care disappeared? *Emerg Med J.* 2014;31(2):96-100.

Methods to reduce wound infection continue to be debated. Most physicians are no longer treating patient with antibiotics if the risk is less than 5%. The importance of time to closure remains debatable. The investigators in this study looked at 27 variables and whether they had an effect on wound infection rates. The multicenter study was performed in prospectively. A total of 2663 patients completed follow up. Only 69 infections were diagnosed (2.5%). Time to wound closure of less than 12 hours was not superior to longer than 12 hours in this study. Other factors did seem to increase the risk of infection. Factors and relative risks (RR) include diabetes (2.7), lower extremity location (4.1) contaminated wounds (2.0) and size >5 cm. ■