



ABSTRACTS IN URGENT CARE

- Pyuria and nephrolithiasis
- PPIs and CAP
- Antibiotics, NSAIDs for bronchitis
- AAP guidelines for pediatric antibiotics
- Tiotropium vs Salmeterol for asthma

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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.

Pyuria Poor Predictor of UTI in Nephrolithiasis

Key point: Classic symptoms and urine culture are the best indicators of infection in patients with acute nephrolithiasis. Pyuria proved a poor predictor.

Citation: Abrahamian FM, Krishnadasan A, Mower WR, Moran GJ, Talan DA. Association of pyuria and clinical characteristics with the presence of urinary tract infection among patients with acute nephrolithiasis. *Ann Emerg Med* 2013;62(5):526-533.

Infection can complicate the diagnosis of acute nephrolithiasis. Patients with both a stone and an infection are at much greater risk of complications including sepsis. Having a method to decide who needs antibiotics before a culture grows would both reduce unnecessary administration of antibiotics and delineate those who are at greater risk of complications.

To determine what factors can be used to decide which patients also have a urinary tract infection (UTI), Investigators in California looked at 360 patients with acute nephrolithiasis diagnosed by CT scan without contrast. Of these patients, 8% were found to have UTI by culture. A positive culture was defined as single-organism growth at greater than 10³ colony forming units/mL.

Unfortunately pyuria was a poor predictor of the likelihood of UTI. As with any screening test, the higher the white blood cell (WBC) count, the better the specificity, but sensitivity falls

precipitously. Pyuria defined as a level greater than 5 WBCs/hpf had a sensitivity of 79% and specificity of 81% for UTI, whereas using 20 WBCs/hpf had a sensitivity of 57% and specificity of 94% for UTI. As with all UTIs, a positive nitrate was specific, but not sensitive. Female gender, fever, dysuria and previous UTI all had relative risks approaching or greater than five. ■

PPIs and Risk of Hospitalization for CAP

Key point: Determining why a patient is on an acid suppression medication may help risk stratify those at increased risk of community-acquired pneumonia.

Citation: Filion KB, Chateau D, Targownik LE, et al. Proton pump inhibitors and the risk of hospitalisation for community-acquired pneumonia: Replicated cohort studies with meta-analysis. *Gut*. 2013 Jul 15; [e-pub ahead of print].

Determining if a patient is at increased risk of a disease such as pneumonia may change the tests a physician obtains to diagnose symptoms. Fear of increased risk of pneumonia may also cause a provider not to prescribe medication that may alleviate a patient's symptoms. Observational studies have shown that patients on acid suppression drugs may be at increased risk of community-acquired pneumonia (CAP).

Investigators in Canada tried to determine if acid suppression with a proton pump inhibitor (PPI) or diagnosis of gastroesophageal reflux (GERD) was the determining factor for increased CAP risk. To exclude GERD as the cause, investigators looked at patients placed on PPI for protection against new nonsteroidal use rather than those with GERD. This study was performed in a retrospective fashion on patients older than age 40 who used PPI for more than 28 days. The authors compared 47,000 exposed and 4.3 million unexposed patients over a period of 6 months.



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.

Neither PPI nor histamine type 2 blockers increased the risk of hospitalized CAP when statistical adjustments were made. Although the study used hospitalized pneumonia as its endpoint, it definitely calls into question whether PPI or the presence of GERD is the true risk factor for the increased risk of pneumonia. Obviously further study is needed, but for now it may help to determine why a patient is taking a PPI when considering risk of pneumonia. ■

Antibiotics, NSAIDs for Bronchitis

Key point: *Amoxicillin, clavulanic acid, and ibuprofen are no better than placebo for bronchitis with colored sputum and may lead to more problems due to greater side effects.*

Citation: Llor C, Moragas A, Bayona C, et al. Efficacy of anti-inflammatory or antibiotic treatment in patients with non-complicated acute bronchitis and discoloured sputum: Randomised placebo controlled trial. *BMJ*. 2013;347:f5762.

For some time, it has been known that most cases of bronchitis are viral and unlikely to respond to antibiotics, yet providers often still prescribe antibiotics on the basis of findings such as colored sputum. Ibuprofen is also a common suggestion for bronchitis. Investigators in Spain attempted to see if either of these prescriptions might hasten recovery from bronchitis.

In a single-blind, trial, 416 participants were randomized to into antibiotics, ibuprofen or placebo. No statistical difference among the groups was found in relation to days with significant cough. Duration was approximately 9 days for the patients in the ibuprofen group, versus 11 days for those on antibiotics or placebo. Of interest, side effects were more prevalent in the antibiotic and ibuprofen arms at 12% and 5%, respectively, compared with 3% for the placebo group. ■

AAP Guidelines for Antibiotics in Childhood Illness

Key point: *Antibiotics in common childhood illnesses should be reserved only for those with strict diagnoses, significant symptoms or prolonged duration according to the American Academy of Pediatrics.*

Citation: Hersh A, Jackson MA, Hicks LA, and the Committee on Infectious Diseases. Principles of Judicious Antibiotic Prescribing for Bacterial Upper Respiratory Tract Infections in Pediatrics. *Pediatrics*. Published online November 18, 2013.

Otitis media, sinusitis and pharyngitis are common complaints in children. According to the authors, antibiotics are given to as many as 1 in 5 patients for a total of 50 million prescriptions per year in the United States alone. This article focuses on up-

per respiratory infections and the diagnoses of otitis media, sinusitis, and pharyngitis. The authors suggest three principles to reduce antibiotic use:

1. Consider likelihood of bacterial cause;
2. Consider benefits versus harms of antibiotic use; and
3. Prescribe judiciously

These principles are then applied to each of the three diagnoses. Otitis media diagnosis requires both effusion and signs of inflammation. The number of patients needed to treat to produce benefit is still four. Amoxicillin is still first-line therapy and in children older than 2, watchful waiting should be considered for mild or unilateral disease.

Sinusitis may be bacterial with worsening, severe or prolonged symptoms (>10 days). Treatment with antibiotics is beneficial only for patients with strictly defined symptoms and once again, amoxicillin is recommended as first-line therapy.

Bacterial (strep) pharyngitis should only be treated when testing is positive. Testing should only be performed on patients with at least two symptoms (fever, tonsillar swelling/exudate, lymphadenopathy, or absence of cough). Benefits include shortened symptom duration and reduced risk of rheumatic disease. Amoxicillin with consideration of once-daily dosing is recommended. ■

Response to Tiotropium vs Salmeterol for Asthma

Key point: *More than one subgroup of asthma may exist and further testing is needed to help determine the best medication to add to inhaled steroids. This study attempts to define the subgroup best treated with tiotropium.*

Citation: Peters SP, Bleecker ER, Kunselman SJ, et al. Predictors of response to tiotropium versus salmeterol in asthmatic adults. *J Allergy Clin Immunol*. 2013; 132(5):1068-1074.e1.

Although inhaled corticosteroids are considered first line for asthma control, several options exist for second-line treatment. The investigators in this study attempted to find a subset of patient who would respond best to a long-acting muscarinic medicine such as tiotropium.

The study was performed in a double blind three-way cross-over manner. Increased inhaled steroids, tiotropium and salmeterol were each tried for 14 week. Morning peak flows were used to evaluate treatment success. The investigators found large numbers of patients who responded to either salmeterol or tiotropium, but not both. Response to albuterol appeared to predict which patients would respond better to tiotropium. The authors themselves stated that further testing to replicate their findings is needed before tiotropium is used prior to a trial of a long-acting beta agonist. ■