Efficacy of Diagnosing, Treating and Managing Febrile Urinary Tract Infections in Children with Vesicoureteral Reflux

Panel addresses success of antibiotic prophylaxis for preventing febrile UTI as well as the impact of the American Academy of Pediatrics UTI 2011 Guidelines for diagnosing and managing febrile UTI in Children with VUR

Orlando, FL, May 18, 2014 — Two studies evaluating widely-used practices to prevent, diagnose and manage febrile urinary tract infections (UTI) in children with vesicoureteral reflux (VUR) will be presented at the 109th Annual Scientific Meeting of the American Urological Association (AUA). The joint press conference will be held at the Orange County Convention Center in Orlando, FL on Sunday, May 18 at 8:30 a.m. ET.

Many children develop UTIs. Some children are more prone to these infections than others and may develop recurrent UTIs, which in most cases, are treated with antibiotics. Children with febrile UTIs (infected urine that travels into the upper urinary tract and the kidneys resulting in fever) may have an underlying problem with their urinary tract, making it more likely for them to experience a serious infection. The most common underlying problem is VUR, which is an abnormality in the connection between the bladder and one or both of the ureters. Affecting approximately one percent of all children, those with VUR are often treated with antibiotics to prevent febrile UTI; however a recent study suggests antibiotics may not reduce the chance of febrile UTI in children.

In a separate study, which looked at the practice parameters for diagnosing and managing febrile UTI in children, it reveals the 2011 American Academy of Pediatrics (AAP) Guideline, “Urinary tract infection: clinical practice guideline for the diagnosis and management of the initial UTI in febrile infants and children 2 to 24 months” has positively impacted the treatment and management of infants and young children brought into an emergency room with symptoms of febrile UTI.

“The best ways to prevent and treat febrile urinary tract infections in children with VUR are still very much up for discussion,” said Anthony Atala, MD, director of the Wake Forest Institute for Regenerative Medicine and professor and chair of the Department of Urology at Wake Forest Baptist Medical Center, Winston-Salem, NC. “Examining and re-examining the AAP guidelines and practices that guide our work is critical to better understand the condition and improve the lives of those children who are living with the condition each day.”

Study Details

Antibiotic Prophylaxis for Prevention of Febrile Urinary Tract Infections in Children with Vesicoureteral Reflux: A Subgroup Meta-Analysis of Randomized Controlled Trials (#MP44-04): Researchers from Federal University of Juiz de Fora, University of Sao Paulo and State University of Feira de Santana in Brazil searched MEDLINE and EMBASE peer reviewed articles pertaining to randomized controlled trials of antibiotic prophylaxis for febrile UTI in children with VUR. Six studies were found acceptable for meta-analysis.

Results showed:

- Of the 986 patients, dilating VUR was observed in 471; 515 had non-dilating VUR.
- In the dilating VUR patients, the risk of recurrent febrile UTI was 22.46 percent in those who received antibiotics and 29.79 percent who received a placebo. The relative risk of treatment failure with antibiotics was 0.75 (95 percent [CI] 0.56-1.01) and the absolute risk reduction of UTI was 7.33
For patients with non-dilating VUR, the risk of febrile UTI was 5.31 percent in those who received antibiotics and 6.09 percent in those who received a placebo. The relative risk of treatment failure with antibiotics was 0.87 (95 percent [CI] 0.42-1.82) and the absolute risk reduction of UTI was 0.78 percent.

Investigators concluded the benefit of antibiotic prophylaxis is small at best, and there is not enough evidence to support the generalized use of them to prevent UTI in children with VUR. Additionally, it is uncertain whether antibiotic prophylaxis reduces the chance of febrile UTI in children with VUR although findings did suggest specific subgroups of children with dilating VUR may benefit from antibiotic prophylaxis.

Early Effect of American Academy of Pediatrics UTI Guidelines on Emergency Admissions, Radiographic Imaging and Diagnosis of Vesicoureteral Reflux (#MP44-03): Researchers from Emory University and Children’s Healthcare of Atlanta, GA examined diagnosis and management of young children with febrile UTI before and after implementation of revised practice parameters by the AAP. Authors evaluated young children with febrile UTI, aged two months to two years, before and after implementation of these guidelines to evaluate the effect they had in the emergency department setting.

Results showed:

- There was no significant difference in admissions for febrile UTI, before and after guideline implementation (53.4 percent versus 46.6 percent, p=.371).
- Admitted patients were significantly younger (0.31 years) than those managed as outpatients (0.91 years, p<0.0001).
- No correlation was found between ultrasound and voiding cystourethrogram positivity.

Researchers concluded the 2011 AAP guidelines positively impacted the management of infants and young children presenting to the emergency department with febrile UTI, as the number of voiding cystourethograms obtained in this population decreased by more than half.

NOTE TO REPORTERS: Experts are available to discuss this study outside normal briefing times. To arrange an interview with an expert, please contact the AUA Communications Office at 410-689-3932 or e-mail cfrey@AUAnet.org.

About the American Urological Association: The 109th Annual Meeting of the American Urological Association takes place May 16 – 21 at the Orange County Convection Center in Orlando, FL.

Founded in 1902 and headquartered near Baltimore, Maryland, the American Urological Association is a leading advocate for the specialty of urology, and has more than 20,000 members throughout the world. The AUA is a premier urologic association, providing invaluable support to the urologic community as it pursues its mission of fostering the highest standards of urologic care through education, research and the formulation of health policy.

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