Pediatric Infectious Diseases and Medical Microbiology

Four Things Physicians and Patients Should Question

by
Association of Medical Microbiology and Infectious Disease Canada

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Choosing Wisely Canada™
In collaboration with the Canadian Medical Association

1 Don't routinely use antibiotics other than amoxicillin in the treatment of children with presumed community-acquired pneumonia (in the outpatient setting).

Preschool-aged children with CAP (community acquired pneumonia) frequently do not require antibiotics, as most disease is caused by viral infections. Children with suspected CAP of bacterial origin should usually receive amoxicillin for outpatient treatment, or ampicillin or penicillin G for inpatient treatment. These agents have sufficient activity against the common bacterial pathogens causing CAP without being unnecessarily broad. Third-generation cephalosporins should be reserved for children who are unimmunized or with severe infection, or where there are high rates of penicillin-resistance among invasive pneumococcal isolates. Additional agents may be indicated in cases of suspected staphylococcal pneumonia, atypical pathogens, or influenza.

2 Don't use a bag for collection of urine cultures to diagnosis urinary tract infections.

Bacterial growth in cultures of bag urine specimens are more likely to be falsely positive in young children with suspected urinary tract infection (UTI) due to contamination with perineal flora. A bag urine culture cannot therefore be used to establish the diagnosis of UTI and may lead to overtreatment. Although a negative bag culture would rule out a UTI, a positive culture requires confirmation by a more specific method, incurring substantial delay. Cultures of urine specimens obtained by catheterization or suprapubic aspiration are more specific and as such are preferred as the routine method of urine collection in non-toilet trained children. Clean-catch, the standard technique of urine collection for toilet-trained children, is a non-invasive method sometimes attempted in infants but is also associated with relatively high rates of contamination.

3 Don't routinely collect or process specimens for Clostridium difficile testing in infants less than one year of age with diarrhea.

Infants are commonly asymptomatic carriers of C. difficile (14-63%), but clinical illness is rarely reported before 12-24 months of age. It has been hypothesized that infants lack the cellular machinery for Clostridium toxin internalization. When investigating an infant with diarrhea, alternative diagnoses should be considered even with a positive test for C. difficile. Testing should be limited to immunosuppressed infants or those with underlying intestinal conditions (e.g. Hirschsprung disease, inflammatory bowel disease) when other etiologies have been ruled out. Therefore, it is prudent to avoid routine testing in children less than 12 months, and for children 1-3 years of age, test for other causes of diarrhea first, particularly viral.

4 Don't routinely treat uncomplicated acute hematogenous osteomyelitis with prolonged intravenous therapy.

Large retrospective cohort studies have shown no difference in treatment failure rate between children with uncomplicated acute hematogenous osteomyelitis treated with prolonged IV therapy when compared with shorter IV therapy and early transition to oral, to complete the course of therapy. "Prolonged" IV therapy definitions varied and ranged from 7 days or more in one cohort to the entire treatment course of 3 to 6 weeks in another. Of note, complications with PICC lines in the prolonged treatment arms were seen at a rate between 3-15%. Consideration for use of prolonged IV therapy is in complicated disease (significant bone destruction; resistant or unusual pathogen; immunocompromised patient; sepsis or septic shock; venous thrombosis; metastatic foci or important abscess formation). Guidance as to when to consider transition to oral therapy includes a good clinical response and consideration of the following: afebrile for 48-72 hours; normalization of inflammatory markers or decrease in CRP by 50%; absence of complications or metastatic foci; and negative blood culture if culture was initially positive.

How the list was created

The recommendation list was developed by a representative working group of the Pediatric Committee of AMMI Canada in collaboration with AMMI Canada's CWC leads that put forth the Infectious Diseases and Medical Microbiology recommendations. This working group sent out electronic correspondence to all AMMI Canada members for suggestions, to solicit candidate recommendations. The top ten recommendations were selected by the working group members through multiple teleconferences. The top ten statements were then disseminated to the AMMI Canada membership for comments, and the working group incorporated comments from the membership at large. During a face-to-face consensus meeting (held in Toronto at the annual AMMI Canada/CACMID meeting on Saturday May 6th, 2017), all attending members were invited to discuss and vote on the top five statements. Finally the selected top five recommendations were redistributed to the membership at large, requesting any further input/modification. This list was then submitted to CWC in December of 2017 and after being reviewed by all participating societies the list was published as four recommendations in February 2018.

Sources

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About The Association of Medical Microbiology and Infectious Disease Canada

The Association of Medical Microbiology and Infectious Disease Canada (AMMI) is a proud partner of the Choosing Wisely Canada campaign. AMMI Canada is the national association that represents physicians, clinical microbiologists and researchers specializing in the fields of medical microbiology and infectious diseases. Through promotion of the diagnosis, prevention and treatment of human infectious diseases and by our involvement in education, research, clinical practice and advocacy, AMMI Canada aims to serve and educate the public and also to enhance the career opportunities of its members through professional development and advocacy initiatives.

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About Choosing Wisely Canada

Choosing Wisely Canada is the national voice for reducing unnecessary tests and treatments in health care. One of its important functions is to help clinicians and patients engage in conversations that lead to smart and effective care choices.

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