

Comparison of Macrolide Use in Hospitalized Children with Community Acquired Pneumonia (CAP) Before and After the Publication of Clinical Practice Guidelines

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Introduction

The 2011 Pediatric Infectious Disease Society (PIDS) and Infectious Diseases Society of America (IDSA) guidelines for treatment of community-acquired pneumonia (CAP) in children recommend the addition of a macrolide to a beta-lactam antibiotic for hospitalized children in whom atypical pneumonia is a concern. Studies have demonstrated shorter lengths of stay for school-aged children treated with combination therapy versus those treated with a beta-lactam alone. In light of the emerging benefits of combination therapy, we sought to determine if use of macrolides for children hospitalized with CAP had changed after the publication of the PIDS/IDSA guidelines.

Methods

Administrative records for children with a primary discharge diagnosis of pneumonia from January 1, 2009 through June 30, 2013, were collected from the Pediatric Health Information System (PHIS) database. The number of children who received macrolides prior to (pre-guideline group) and after (post-guideline group) publication of the guidelines were compared using Chi Square test. Groups were further analyzed based on age to determine if macrolides had been used more frequently in school-aged children.

Results

There was not a significant overall difference in the use of macrolides before and after publication of the IDSA guidelines ($p=0.18$). Of the pre-guideline group ($n=6496$), 31.1% received a macrolide, compared to 32.4% of the post-guideline group ($n=3527$). There was also not a significant change in the use of macrolides by age: infant/preschool (0-5yrs), $p=0.12$; young school-aged (6-10yrs), $p=0.33$; older school-aged (≥ 11 yrs) $p=0.98$.

Discussion

The lack of a significant increase in the use of macrolides after publication of the guidelines may be due to many factors, including a time lag between publication and adoption into clinical practice. Further studies using data collected after publication of the guidelines will provide insight into clinical practice changes. Of particular interest will be whether use of macrolides in school-aged children will increase given the demonstrated benefits in length of hospitalization for this age group. Infant and pre-school-aged children treated with combination therapy have not been shown to benefit from the addition of a macrolide, and costs of hospitalization in this group have also been higher. Thus, further studies examining the use of macrolides for CAP in this age group would also be valuable.