



Community-Acquired Methicillin-Resistant *Staphylococcus aureus* Hand Infections in the Pediatric Population

Michael T. Chung, B.S., Patrick Wilson, M.D., Brian Rinker, M.D., FACS
Division of Plastic and Reconstructive Surgery; University of Kentucky; Lexington, KY

Introduction / Background

Several recent studies of community-acquired hand infections have reported an alarmingly high rate of methicillin-resistant *Staphylococcus aureus* in adult patients without traditional MRSA risk factors. However, there has not been a large clinical series looking at these infections in the pediatric population. The purpose of our study was to review a large clinical series of pediatric hand infections in order to determine the prevalence of MRSA in this population, to identify risk factors associated with a higher incidence of MRSA, and to propose a rational treatment algorithm.

Materials & Methods

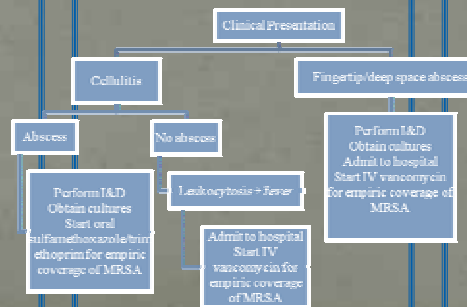
A retrospective review was conducted of all pediatric patients admitted to a large tertiary medical center for hand infections between 2001 and 2010. Demographic data were collected as well as medications, preexisting medical problems, type and location of infection, inciting events, type of treatment, culture results, and length of stay. The incidence of MRSA was determined. A multivariable regression analysis was performed to identify factors which were associated with a higher incidence of MRSA.

Results

During the study period 146 patients met the inclusion criteria, ranging in age from 10 days to 14 years. There were 136 healthy children and 8 with underlying immune compromise. Fifty-five patients were treated non-operatively, 91 patients underwent bedside I/D, and 17 patients underwent drainage in the operating room. The length of hospital stay ranged from 1 to 7 days. The overall incidence of MRSA hand infections was found to be 25%. The incidence of MRSA was 28.8% in the healthy pediatric population and 0% in immunocompromised patients. Patients requiring drainage in the operating room had a higher incidence of MRSA than those treated with bedside I/D ($p = 0.042$). There was a trend toward a higher incidence of MRSA in deep space abscesses compared to superficial abscesses and fingertip abscesses ($p = 0.217$). Patients with history of trauma and patients with history of previous MRSA infections had a higher rate of MRSA than patients with other inciting events ($p = 0.018$).



Treatment Algorithm



Discussion

The incidence of MRSA in pediatric hand infections was found to be 25%, which was within the published range for adults. Patients with more severe, deep space abscesses requiring operative drainage and patients with a history of previous MRSA infections were found to have higher incidences of MRSA. Current recommendations for empiric antibiotic coverage of MRSA in adults presenting with community-acquired hand infections seem to be appropriate for the pediatric population, as well.

Acknowledgements

The authors wish to thank Dan Davenport, PhD, for assistance with statistical analysis.