Evaluating the use of preoperative antibiotics in pediatric orthopaedic surgery
Nathan Formaini DO, Paul Jacob DO, John Kean MD, Leisel Willis BSc
Nationwide Childrens Hospital and Doctors Hospital of Columbus

Introduction: The purpose of this study was to evaluate the rate of infection following minimally invasive procedures on a consecutive series of pediatric orthopedic patients. We hypothesized that the use of preoperative antibiotics for minimally invasive pediatric orthopedic procedures does not significantly reduce the incidence of SSI requiring surgical debridement within 30 days of the primary procedure.

Methods: We retrospectively reviewed 2,330 patients having undergone minimally invasive orthopedic procedures at our institution between March 2008 and November 2010. Knee arthroscopy, closed reduction with percutaneous fixation, soft tissue releases, excision of bony- or soft- tissue masses, and removal of hardware constituted the vast majority of included procedures. Two groups, based on whether prophylactic antibiotics were administered prior to surgery, were created and the incidence of a repeat procedure required for deep infection was recorded. Statistical analysis was performed to determine significance, if any, between the two groups.

Results: Chart review of the 2,330 patients identified 1,087 as having received preoperative antibiotics, while the remaining 1,243 patients did not receive antibiotics prior to surgery. There were 0 SSI’s in the “antibiotics given” group and 1 SSI’s in the “no antibiotics given” group that required additional surgery within 30 days of the primary procedure due to a complicated SSI. Our data revealed no significant increase in the incidence of complicated infection requiring additional procedures when antibiotics had not administered prior to surgery.

Discussion: Though prophylactic antibiotics have been shown to confer numerous benefits for patients undergoing relatively major operations, their use in cases of minimally invasive and/or percutaneous orthopedic surgery is not well defined. Our data suggest that the use of prophylactic antibiotics may not be indicated for many less-invasive procedures when performed in a low-risk pediatric population. Future studies are warranted to help establish evidence-based guidelines regarding the routine use of prophylactic antibiotics in this specific population, hopefully resulting in improved cost-effectiveness and safety while slowing the emergence of new drug-resistant organisms.

References

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<tr>
<th>Antibiotic</th>
<th>Cost of single dose</th>
<th># of patients</th>
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<tr>
<td>Cefazolin</td>
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<td>Clindamycin</td>
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<td>Other</td>
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**Total cost**: $54,387.03