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Setting a Threshold for Discharge Antibiotics in Children with Perforated Appendicitis: A Study Update

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Setting a Threshold for Discharge Antibiotics in Children with Perforated Appendicitis: A Study Update
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Introduction
• Duration of antibiotic use in perforated appendicitis has been questioned
  • Balancing risk of intraabdominal abscess vs. antibiotic overutilization
• Previously, oral antibiotics were continued at discharge in children with abnormal white blood cell count (WBC) for age
• Retrospective review suggested decreasing the threshold for discharge antibiotics to <10 x 10³ mcL (see Table and Figure 1) may result in fewer intraabdominal abscesses (IAA)

Methods
• Children with perforated appendicitis
• PRE cohort: children not discharged with antibiotics due to normal WBC for age (see Table 2)
• POST cohort: children not discharged with antibiotics due to WBC <10
• Primary outcome: development of IAA

Results
• 752 patients
  • 552 PRE cohort, 200 in the POST cohort
• Post-operative IAA rate in PRE cohort 6.5% vs. 4% POST cohort (0.22)

Conclusion
While not statistically significant, discharge WBC <10 as a threshold for additional antibiotic usage in perforated appendicitis resulted in fewer post-operative IAA.

Table 1. Sensitivity and specificity analyses on PRE cohort suggesting new discharge WBC count threshold should be <10.

<table>
<thead>
<tr>
<th>WBC Cutoff</th>
<th>Sensitivity</th>
<th>Specificity</th>
<th>OR (95% CI)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>69%</td>
<td>39%</td>
<td>1.46 (0.71-3.0)</td>
<td>0.31</td>
</tr>
<tr>
<td>10</td>
<td>44%</td>
<td>70%</td>
<td>1.86 (0.95-3.65)</td>
<td>0.07</td>
</tr>
<tr>
<td>12</td>
<td>22%</td>
<td>89%</td>
<td>2.25 (1.0-5.09)</td>
<td>0.06</td>
</tr>
</tbody>
</table>

Table 2. Institutional normal WBC count for age

Table 3. Baseline demographics and clinical characteristics of children in the PRE and POST cohorts