Simplified Approach to Treatment of Ruptured Appendicitis in a Pediatric Population

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**Background**
Antibiotics offering broad coverage for enteric bacteria are usually required to reduce the post appendectomy risk of infection. Historically, ampicillin in combination with an aminoglycoside and metronidazole has been the combination of choice. In 2006, St. Peter, et al. published a simplified regimen of once daily ceftriaxone and metronidazole which was shown to be more cost effective without demonstrating any negative impact in terms of complications.¹

**Purpose**
The Antibiotic Stewardship Committee at Phoenix Children’s Hospital undertook a quality improvement project to apply a simplified once daily regimen of ceftriaxone 50 mg/kg/dose up to 2 grams and metronidazole 30 mg/kg/dose up to 1 gram in children with ruptured appendicitis.

**Methods**
ICD-9 codes were used to identify patients in a retrospective fashion using the following criteria: age between 2-18 years, minimum of a 5-day hospitalization, and lack of evidence of abscess at presentation. A 6-month period after implementation of the new protocol (post-group) was compared to a 6-month period before it was implemented (pre-group). Antibiotic costs and rate of complications were compared using a student’s T-test to calculate a p-value.

**Results**
31 and 33 patients met the criteria for the pre and post group, respectively. Per patient antibiotic costs declined from an average of $2,053 per patient in the pre-group to $798.47 in the post-group (p=0.0001). Review of occurrence reports and readmission rates showed no increases from pre to post group. The estimated medication cost saving per year at PCH would be $250,000.

**Conclusion**
Implementation of a simplified antibiotic regimen for ruptured appendicitis resulted in significant cost savings without an increased risk of post-surgical complications.