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Does the overall delay before surgery affect the outcome of appendicitis?

Jassat, Farhana

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ABSTRACT

Background: Surgery without delay has been the standard of treatment for acute appendicitis. Numerous studies have challenged this practice by defining a time frame for safely delaying surgery.

Objectives: To determine the effect of pre- and in-hospital delay on the outcome for patients with clinically acute unperforated appendicitis.

Methods: A single centre, retrospective two year descriptive study was undertaken at a regional hospital. Descriptive statistics were used to describe the patient population, pre- and in-hospital delay and surgical outcomes namely, severity of appendicitis, morbidity and length of hospital stay. Univariable and multivariable poisson regression with robust error variance was used to determine factors associated with suppurative or gangrenous appendicitis.

Results: 103 patients were included. The median age was 25 years (Inter Quartile Range 21-33 years) and 60 (58%) were male. The median pre-hospital delay was 48 hours (24-72 hours), in-hospital delay was 16.1 hours (9.5-22.5 hours) and overall delay was 56.3 hours (40.9-870 hours). There were no statistical differences between overall delay before surgery and surgical outcome. Pre-hospital delay was associated with findings of suppurative/ gangrenous appendicitis (p=0.032), post-operative complications (p=0.002) and longer hospital stays (Median 4 days (Inter Quartile Range 3- 6 days). Age (adjusted relative risk 1.34 (95% Confidence interval [0.99,1.80]) and white cell count (adjusted relative risk 1.55 (95% Confidence interval [1.09,2.20]) independently predicted adverse outcomes.

Conclusion: The overall delay before surgery does not affect the outcome of acute appendicitis. However, patients older than 25 years, with a pre-hospital delay of >2 days and a white cell count ≥11 cells/µl on presentation should be fast-tracked for surgery.