

# The Rate of Nonoperative Management of Acute Uncomplicated Appendicitis in the US is Accelerating and is Associated with Significantly Increased Mortality

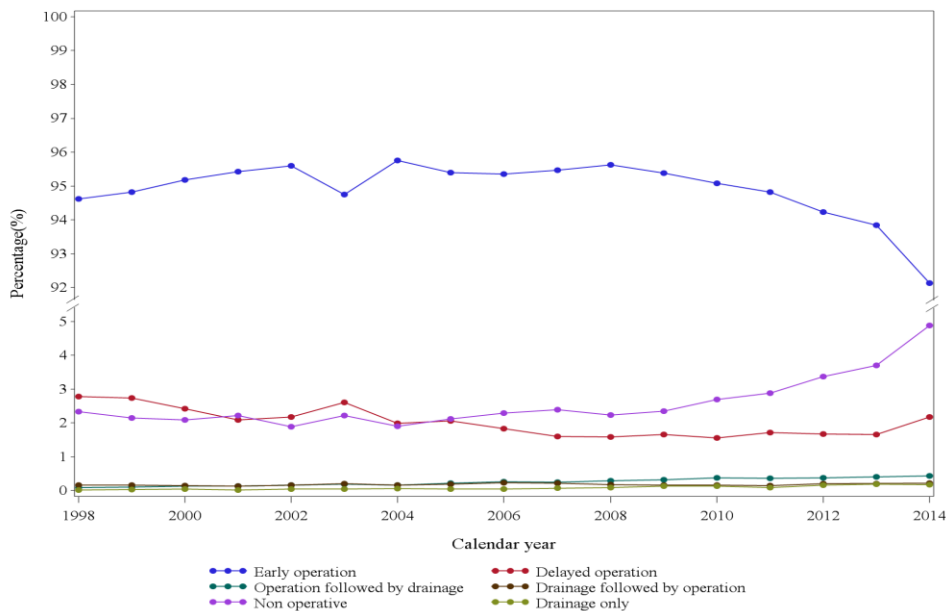
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**INTRODUCTION:** Several recent studies have evaluated the efficacy of nonoperative management of appendicitis. We evaluated changes in the treatment strategy of uncomplicated appendicitis in the US from 1998-2014 and associated outcomes from 2010-2014.

**METHODS:** 1998-2014 NIS was queried for patients with a principal diagnosis of appendicitis based on Clinical Classification Software Code 142. Exclusion criteria were age<18, elective admission, peritoneal abscess (ICD-9 5401). Procedures were identified by ICD-9. We compared rates of early operation (EO, day 0 or 1) to nonoperative management (NO). For cases from 2010-2014, we compared outcomes for EO to NO. Frequencies were analyzed by Chi2, continuous variables by Student's T-Test, and trends by Cochran-Armitage.

**RESULTS:** From 1998-2014, NO increased 2-fold from 2.3% to 4.9% of appendicitis cases ( $p<.001$ ). From 2010-2014, NO was associated with older age (49 vs. 41 years,  $p<0.05$ ), higher Elixhauser Comorbidity Indices (1.35 vs. 0.78,  $p<0.05$ ), and more inpatient diagnosis (5.7 vs. 3.8,  $p<0.05$ ). In logistic regression, NO was associated with increased mortality (OR 2.4, 95%CI 1.5-3.8). After case-controlling for age, comorbidity, number of diagnoses, and gender, NO was associated with a 5.8-fold increase in mortality vs EO (0.47% vs. 0.08%)



**CONCLUSIONS:** We find an accelerating rate of nonoperative management of acute appendicitis in the US, and that nonoperative management is associated with significantly increased mortality. Although developing data supports the efficacy of nonoperative management in some cases, there is limited data to support the nonoperative management of elderly medically complex patients with appendicitis and this practice may be associated with significantly increased morbidity and mortality.