

# Antibiotics Use in Acute Pancreatitis: An Ongoing Problem

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## INTRODUCTION

Antibiotics use in acute pancreatitis remains a controversial practice. Antibiotic use in acute pancreatitis is indicated in cases of infected pancreatic necrosis, ideally after a culture is obtained. In clinical practice however, antibiotic use is common even in cases without obvious or documented infection.

## METHODS

This retrospective cohort study included adult patients diagnosed with acute pancreatitis in our hospital between 01/2016- 12/2019. Pancreatitis was confirmed by using the revised Atlanta criteria. Antibiotic use, pancreatitis type (IEP: Idiopathic Edematous pancreatitis or NP: Necrotizing Pancreatitis), etiology, concerns for pancreatic or extra-pancreatic infection and length of stay (LoS) were also collected. Statistical analysis performed by Minitab.

## RESULTS

- 810 patients included
- 727 (90%) and 83 (10%) had IEP and NP respectively
- Most common etiologies of acute pancreatitis:
  - Alcohol (25%)
  - Gallstones (28%)
- 40% of all patients received antibiotics
- 25% of patients without extra-pancreatic infections concerns received antibiotics
- 19% of patients without any infection concerns received antibiotics.
- NP cases were more likely to receive antibiotics. When patients with infection concerns were excluded, the antibiotics administration rate was 62% while in IEP cases was 17% ( $p < 0.001$ )
- Acute pancreatitis due to specific etiologies were more likely to get antibiotics:
  - Antibiotics were used in 50% of ERCP-induced pancreatitis
  - Antibiotics were used in 39% of gallstone-induced pancreatitis.
- NP cases had a significant LoS increase relative to IEP of 5.5 days.
- An LoS increase of 3 and 6 days was noted with extra-pancreatic and pancreatic infection concerns respectively.
- The etiology did not affect LoS.
- The LoS was significantly shorter in those who received no antibiotics, even when cases with infection concerns were excluded
  - Median LoS, with no antibiotic use was 4 days
  - Median LoS with antibiotic use, was 6 days

## DISCUSSION

Despite clear guidelines, antibiotics are inappropriately used in acute pancreatitis management. Our study indicated antibiotic use in up to 40% of acute pancreatitis cases, while in 19% no clear indication was observed. Antibiotic use was much more common in NP cases. LoS was significantly longer when antibiotics were used, even when no infection suspected. To improve this problem, an acute pancreatitis order set will be included in our hospital's electronic health records and the antibiotic utilization rate will be reassessed.

### LoS in Patients without Infection concerns

Antibiotics	N	Mean LoS	Median LoS
NO	469	4.7	4
YES	119	8.1	6