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Relationship Between High Bile Juice Amylase Levels And Chronic Bacterial Infections In Patients With Gallbladder Cancer

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Background : Pancreatic enzyme reflux into the biliary tract is associated with chronic inflammation and increased cellular proliferation in the biliary epithelium, leading to biliary carcinoma. We evaluated the relationship between high bile juice amylase levels and biliary microflora in patients with malignant gallbladder lesions.

Methods : In this retrospective study, 25 gallbladder specimens were obtained from patients with gallbladder cancer to evaluate amylase levels and perform bacterial culture. The samples were divided into high and low amylase groups, and culture-positive and culture-negative groups for analysis. Bile juice amylase levels more than three times higher than the normal serum amylase level (36–128 IU/L) were considered high.

Results : The number of positive cultures was higher in the high amylase group than in the low amylase group, but the difference was insignificant. There were no differences in other clinicopathological factors. Sixteen patients showed positive culture results; Escherichia coli and Klebsiella spp. were the most common gram-negative bacteria, whereas Enterococcus and Streptococcus spp. were the most common gram-positive bacteria. Age and bile juice amylase levels were significantly higher in the culture-positive group than in the culture-negative group. The incidence of bacterial resistance to cephalosporins was 6.25–35.29%, and this incidence was particularly high for lower-generation cephalosporins.

Conclusions : There were no differences in clinicopathological factors according to the bile juice amylase levels in patients with gallbladder cancer. However, bacteria were identified more frequently when the amylase level was high. High amylase levels in the gallbladder can be caused occult pancreaticobiliary reflux, potentially triggering gallbladder cancer.

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