Is Helicobacter pylori Infection Associated with Cholangiocarcinoma Risk? A Meta-Analysis of Published Case-Control and Cohort Studies

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Introduction: Since the discovery of Helicobacter pylori in human biliary system, the association between Helicobacter pylori infection and cholangiocarcinoma is under debate. Observational studies inconsistently reported the relationship between H. pylori infection and risk of biliary tract cancer. This meta-analysis was conducted of published case-control and cohort studies to explore and quantify the association.

Methods: Literature search was carried out to eligible all articles through June of 2016. Overall meta-analysis of all included studies and subgroup analysis was performed based on regional distribution. Subgroup analysis in the light of detection methods and specimen was also conducted. Studies on overall heptobiliary carcinoma were excluded, as well as studies without full text. A random-effects model was assigned to compute summary point estimates with corresponding 95% confidence intervals (CIs). Subgroup and meta-regression analyses were also performed to explore sources of heterogeneity.

Results: 4 case-control studies were included. The subgroup analysis showed that PCr was the most effective and efficient method to detect Helicobacter species in surgically resected biliary and bile. Overall meta-analysis did not favor a significant association between Helicobacter pylori infection and cholangiocarcinoma (cumulative OR 0.57, 95% CI 0.46 to 0.72, P=0.04). Subgroup analysis based on geographic distribution indicated that the prevalence of H. pylori infection in cholangiocarcinoma patients was 96.6% in India, and 50.2% in the United States, with overall prevalence 73.8%. There was significant heterogeneity among studies and obvious publication bias.

Conclusion: This study does not support possible association between Helicobacter pylori infection and cholangiocarcinoma. There is insufficient evidence to conclude any relationship between H. pylori infection and risk of cholangiocarcinoma. Future prospective studies of H. pylori infection and this malignancy are needed.

The Scope of Adverse Effects of Tasty Fruit Juice on Pancreatic/Biliary Disease: A Systematic Review and Quantitative Analysis

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Introduction: Combining pancreatic/biliary disease medicines and fruit juice is common in patients. However, the negative interactions between them are poorly understood. A systematic review and quantitative analysis was carried out to study this matter.

Methods: A comprehensive literature search was performed using PubMed, SCOPUS, Cochirane Library from 1990 to 2016 and the following search terms: “fruit juice” and “pancreatic enzyme”. A total of 121 unique pairs of fruit—medicines for pancreas/biliary disease interactions were retrieved. “cholestyramine” “tylenol” “ibuprofen” “hydrocodone” “morphine” “gallstone dissolution agents” Library from 1990 to 2016 and the following search terms: “fruit juice”, and “pancreatic enzyme”. Methods: Quantitative analysis was carried out to study this matter.

Results: Among the initial 84 publications, 63 remained after exclusion according to title and abstracts. A total of 121 unique pairs of fruit—medicines for pancreas/biliary disease interactions were retrieved. Among these, 73 pairs (60.3%) were retrieved from the primary literature; 92 pairs (74%) from books. A majority were attributed to pharmacokinetic mechanism. Apple juice involved in 11% of the negative interactions.

Conclusion: This study provides gastroenterologists and clinicians with the information on effectively managing the risks of combining pancreatic/biliary medicines and fruit juice.

Endoscopic vs Percutaneous Approach for Successful Biliary Drainage in Palliation of Advanced Hilar Malignancies: A Meta-Analysis and Systematic Review

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Introduction: Palliation in advanced unresectable hilar malignancies — hilar cholangiocarcinoma (HCCA), hepatocellular carcinoma and gall bladder cancer, can be achieved by endoscopic or percutaneous biliary stent placement. It is unclear if one approach is superior to the other in this group of patients. This is a meta-analysis and systematic review to compare clinical outcomes of percutaneous transhepatic biliary drainage (PTBD) and endoscopic biliary drainage (EBD). Aims: Primary outcome was to compare successful biliary drainage of patients with advanced unresectable hilar malignancies in both the groups. Successful biliary drainage was defined as a decrease in bilirubin level >50% within 7 days after stenting.

Methods: Study Selection Criteria: Studies using PTBD and/or EBD for palliation of advanced unresectable hilar malignancies. Studies also included patients with Bismuth type III and IV HCCA. Studies with Bismuth type I and II HCCA were excluded. Studies with patients that underwent any prior surgical resection for their hilar malignancies were excluded from this analysis. Data collection and extraction: Articles were searched in Medline, Pubmed, and Ovid journals. Two authors independently searched and extracted data. Any differences were resolved by mutual agreement. The study design was written in accordance to PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) statement. Statistical Method: Pooled proportions were calculated using fixed and random effects model. The heterogeneity among studies was tested using I2 statistic.

Results: Initial search identified 786 reference articles, in which 62 articles were selected and reviewed. Data was extracted from nine studies (N=546) using PTBD or EBD for palliation in advanced hilar malignancies, which met the inclusion criteria. All studies except two randomized controlled trials were retrospective studies. Median age of pooled patients was 69 years, with a predominant male population of 322 patients. The pooled odds ratio for successful biliary drainage in PTBD group compared to EBD group was 2.53 (95% CI = 1.57 to 4.08). Heterogeneity of studies was measured using I2 (inconsistency) = 70.8% (95% CI = 29.1% to 83.6%). Egger’s B = -0.20 (95% CI = -0.83 to 0.33).

Conclusion: In patients with advanced unresectable hilar malignancies, palliation with PTBD seems to be superior to EBD. PTBD has statistically significant higher rates of successful biliary drainage.