Is there a Relationship between Helicobacter Pylori Infection and Esophageal Cancer?

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Abstract

Background: Several studies had shown that Helicobacter pylori infection is inversely associated with esophageal cancer. These studies had claimed that infection had associated with protective effect. However, other studies come out with different conclusion about the relationship, as a result, the issue has remained controversial.

Objective: The aim of this systematic review and meta-analysis was to examine the association between Helicobacter pylori infection and esophageal cancer. Esophageal cancer is among the foremost frequent neoplasms, a main reason for cancer-related deaths worldwide and a clinically difficult sickness requiring a multidisciplinary approach [15]. muscular structure cancer is split into 2 microscopic anatomy types: muscular structure epithelial cell malignant neoplastic disease (ESCC), associated principally with environmental risk factors (e.g., smoking and alcohol consumption), and muscular structure glandular carcinoma (EAC) situated on the point of the viscus junction, etiologically not to mention esophageal reflux sickness (GERD). within the westernized population, the incidence of EAC redoubled sharply, displacing ESCC, the latter accounting for many of the incidence of muscular structure cancer fifty years past.

Current proof for the protecting or harmful result of H. pylori on EAC is conflicting. On this basis, we have a tendency to aimed to review the literature, specifically original clinical studies and meta-analyses linking H. pylori infection with EAC, however conjointly to supply our personal and others' relative views on this subject.

The initial search in PubMed resulted within the retrieval of 607 articles. Through manual looking out, 220 articles were additional, conveyance the entire to 827. when the initial screening on the idea of their title and/or abstract, 784 articles were excluded and also the full text of forty three articles was evaluated for eligibility. Finally, ten original studies and six meta-analyses were elect.

The principal hypothesis expose by most authors of the aforesaid meta-analyses and a review on muscular structure cancer medicine is that H. pylori infection, with concomitant atrophy of the stomachic corpus and loss of membrane bone cells, ends up in a discount in reflux acidity and consequently in reflux rubor, Barrett's gorge (BE), and EAC development.

In conclusion, existing epidemiological studies provided inconclusive knowledge on associate degree inverse or a neutral association between H. pylori infection and EAC, whereas meta-analyses of empiric studies favor associate degree inverse association. a specific downside of most original studies is unsupportive factors, i.e., multiple factors that weren't taken into thought within the study style or the analysis of knowledge, however might contribute to the pathologic process of EAC. This may need affected the results of the meta-analyses, since they enclosed original studies that failed to adequately change for potential confounders. what is more, the supply of nonuniformity, once it absolutely was ascertained, wasn't evaluated within the meta-analyses. during this regard, well-designed prospective cohort studies with a high-powered sample size square measure needed, within which potential confounders ought to be taken under consideration. this might resolve the contradiction of the positive association of H. pylori infection with GERD or BE, however not with EAC, furthermore because the contradiction of the oncogenic result of H. pylori infection on stomachic cancer and CRC, however not on EAC. Metabolomics may additionally prove useful during this direction within the close to future, as the H. pylori-related metabolites might give additional knowledge.

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Method: We searched the PubMed, Cochrane library, Google scholar data bases. Meanwhile, we retrieved some articles from the references of selected articles. Case-control and cohort studies were included in this systematic review and meta-analysis up to December 2018.

Result: Eleven studies were included to this systematic review and meta-analysis and about 912 articles were retrieved from 8 countries and 6953 people were enrolled.

The mean age the participants were 62+6.49. Summary odds ratios and 95% confidence intervals were calculated using the DerSimonian-Laird method. Q-statistics and I2 statistics were calculated to examine heterogeneity. Subgroup analyses were conducted via histological types. To assess publication bias, funnel plot, Begg's test, Egger test, Trim and Fill, Contour enhanced funnel plot, cumulative meta-analysis and influential or sensitivity analysis were undertaken.

A significant association was observed between Helicobacter pylori infection and esophageal carcinoma (OR: 0.6; 95% CI: 0.42-0.85) (I-squared=80.6%, p=0.000). In addition, after subgroup analysis by sub-types, an association was observed between esophageal adenocarcinoma and helicobacter pylori infection OR (95% CI) was 0.47 (0.3 – 0.75). However, statistical significance was not observed between esophageal squamous cell carcinoma and Helicobacter pylori infection (OR =0.68 (95% CI) was (0.42 – 1.09).

Conclusion: Our results suggests that an inverse association was observed between Helicobacter pylori infection and esophageal adenocarcinoma, however, statistical significance was not observed between Helicobacter pylori infection and esophageal squamous cell carcinoma.

Biography

I am Berhe Dessalegn Tuamay, a 37 years old academician. I got my first degree in medical laboratory technology from Haromaya University and my second degree in public health from Mekelle University. Currently, I have been doing my PhD in Addis Ababa University, College of Health Sciences in epidemiology of cancer predominantly in esophageal cancer. I am in the rank of an assistant professor of public health. I have ample of experiences at various health facilities at different positions as a clinician and an academia. I have served my university as head department of public health and associate dean of college of health sciences for three years. I have participated in several researches and consultancy services. I have more than 20 publications in peer reviewed international journals.