## 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 mata-analysis was to examine the association between Helicobacter pylori infection esophageal cancer.

**Method:** We searched the PubMed database, Cochrane library database, Google scholar and the references of the selected articles. Different types of case-control and cohort studies were included in this systematic review and meta-analysis up to December 2018.

**Result:** A total of 14 studies were used for this systematic review and mata-analysis and about 912 articles were retrieved from 8 countries. In this systematic review and meta-analysis, 6953 people were enrolled. And the mean age the participants was 62+_6.49. Summary odds ratios (OR) and 95% confidence intervals were calculated using the DerSimonian-Laird method. Q-statistics, $I^2$ statistics and meta-regression were calculated to examine heterogeneity. Meanwhile, subgroup analyses were conducted by histological types. In addition, to assess publication bias, funnel plot, Begg's test, Egger test, Trim and Fill, Contour plot, cumulative meta-analysis and influential or sensitivity analysis were undertaken.

Coming in to the esophageal cancer before splitting into sub-types, there was a significant association between Helicobacter pylori infection and esophageal carcinoma (OR: 0.6; 95% CI: 0.42-0.85) (I-squared=80.6%, p=0.000). However, after sub-group analysis by sub-types, still there was an association between esophageal adenocarcinoma and helicobacter pylori infection and the summary OR (95% CI) was 0.47 (0.3 – 0.75). There was relative reduction of heterogeneity among studies ($I^2$ = 68%, p=0.022) but on the other hand, statistical significance was not observed between esophageal squamous cell carcinoma and helicobacter pylori infection OR (95% CI) was 0.68 (0.42 – 1.09) and substantial heterogeneity among studies was observed ($I^2$ = 83.7%, p=0.000). Further analysis were done to assess publication bias, thus, there was no publication bias.

**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.

**Keywords:** Helicobacter pylori, esophageal cancer, adenocarcinoma, squamous cell carcinoma, colonization