Helicobacter pylori

There is considerable controversy around the question as to whether Helicobacter pylori (H. pylori) infection has a protective or causative role in the development of multiple sclerosis (MS). This study evaluated published information to assess the association between H. pylori infection and MS.

Methods: We conducted a comprehensive systematic review of relevant observational studies in international databases. A random-effects model was used to calculate pooled odds ratio (OR) and 95% confidence interval (CI). I2 statistic was used to assess the between-study heterogeneity. Subgroup and meta-regression analyses were applied to identify the source of heterogeneity.

Results: In total, 22 studies (25 datasets) were eligible for the meta-analysis: 17 datasets had prevalence data and eight datasets had data on the mean titer of anti-H. pylori IgG. The pooled prevalence of H. pylori was 44.1% (908/2606) in the MS patients and 46.1% (1016/2200) in the controls, indicating a non-significant protective effect of H. pylori on MS (OR, 0.82; 95%CI, 0.58-1.17). In the subgroup analysis, studies that used ELISA yielded a significant protective association (OR, 0.59; 95%CI, 0.46-0.77), while a positive non-significant association (OR, 1.33; 95%CI, 0.83-2.15) was found from studies that used other serological methods; interestingly, a significant positive association (OR, 6.64; 95%CI, 2.40-13.76) was found from studies that used histological methods to detect H. pylori infection.

Conclusions: Our findings do not support the hypothesis that H. pylori infection represents a protective factor against the development of MS; however, the results varied depending on the diagnostic method(s). Particularly, a significant positive association was identified when studies introduced results based on histological examination, suggesting that active H. pylori infection might be a risk factor for development of MS. Thus, further studies are needed utilizing accurate diagnostic methods to elucidate the association between active H. pylori infection and MS [1)].

Chronic infection of Helicobacter pylori (H. pylori) in ischemic stroke (IS) incidence has been previously studied in several publications; however, conflicting results have been reported. A meta-analysis was used to assess whether chronic infection of H. pylori was associated with risk of IS, and which of the following was more effective for predication of IS risk, antibody IgG of H. pylori (anti-H. pylori IgG), antibody IgG of cytotoxin-associated gene-A (anti-Cag A IgG) or the (13)C-urea breath test. We searched the databases of Medline and Embase, and latest update was January 1, 2012. Case-control studies were considered to be eligible. The odds ratio (OR) and 95 % confidence interval (95 % CI) were calculated using the random-effect model. A total of 13 studies including 4,041 participants were included in this meta-analysis. Of these studies, ten, four and four studies were for anti-H. pylori IgG, anti-Cag A IgG and the (13)C-urea breath test, respectively. Combined analysis indicated that positive anti-H. pylori IgG, anti-Cag A IgG and (13)C-urea breath test were significantly associated with increased risk of IS, respectively, and positive anti-Cag A IgG was more effective for predication of IS risk [OR (95 % CI) = 1.60 (1.21-2.11), P (heterogeneity) = 0.001 for positive versus negative anti-H. pylori IgG; 2.33 (1.76-3.09), P (heterogeneity) = 0.71 for positive versus negative anti-Cag A IgG and 1.65 (1.11-2.47), P (heterogeneity) = 0.17 for positive versus negative (13)C-urea breath test]. In addition, we found that positive anti-H. pylori IgG was closely associated with risk of IS caused by atherosclerosis and small artery disease, but not for cardioembolic IS. This meta-analysis indicated that chronic H. pylori infection was significantly associated with an increased risk of IS, especially for non-cardioembolic IS. Compared with anti-H. pylori IgG and the (13)C-urea breath test, anti-Cag A IgG seemed more effective for prediction of risk of IS [2)].

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2)
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