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Title

Antibiotic resistance of Helicobacter pylori in primary care: an observational cohort study

Priority 1 (Research Category)

Gastroenterology

Presenters

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Abstract

Introduction

Helicobacter pylori (H. pylori) is causally associated with chronic gastritis, peptic ulcer and gastric cancer, with a reported prevalence of 19-35%. Due to increasing antibiotic resistance, the worldwide efficacy of H. pylori eradication treatment has decreased.

Aims & Methods

This study aimed to determine eradication success of H. pylori in primary care in the Netherlands, as a proxy measure for antibiotic resistance development. Real-world routine health care data from Electronic Medical Records from general practices in the region Leiden/The Hague was used. Data was provided by ELAN (Extramural LUMC Academic Network). Patients with an ICPC-code for gastric symptoms or an ATC code for acid inhibition in the period 2010-2020 were selected. Patients with H. Pylori infection were detected based on having received eradication treatment. We investigated antibiotic resistance, defined as the prescription of a second eradication treatment within 12 months. The types of antibiotics prescribed as first eradication treatment were evaluated for resistance rates. If no second treatment was prescribed within 12 months, patients were considered to have been successfully treated.

Results

We identified 138,455 patients with gastric symptoms or acid inhibition from 80 general practices. Mean age was 57 years (SD 18.2) of whom 43% were male. A total of 5,224 (4%) patients received a first eradication treatment and were considered H. pylori positive. The antibiotic treatment combinations

amoxicillin-clarithromycin, amoxicillin-metronidazole and clarithromycin-metronidazole were used in 4,847 (93%), 154 (3%) and 111 (2%) of first eradication treatments, respectively. A second eradication treatment was prescribed within one year to 416 (8%) patients. Thereof, 380 (8%) patients received amoxicillin-clarithromycin, 16 (10%) amoxicillin-metronidazole and 11 (10%) clarithromycin-metronidazole as first eradication treatment and were considered antibiotic resistant. We saw a 0.8% increment per year of patients in need of a second eradication treatment (p=0.003, 95% CI 0.33-1.22).

Conclusion

Almost one-tenth of H. pylori infections in primary care are not successfully treated using a first intervention with clarithromycin and/or metronidazole and require a second eradication treatment. Our study leads to the conclusion that antibiotic resistance plays a slowly increasing role in primary care treatment of patients with H. pylori. Further targeting of the guidelines