Title: IgG and IgM associated with H. pylori and hematology disorders in Georgian population

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Abstract details:

Background

Anemia is a serious public health problem, and its prevalence remains unacceptably high in many regions , affecting roughly a third of the world's population. *H. pylori* infection in hematological system diseases is not well understood. We conducted this retrospective study to explore the association between *H. pylori* infection and anemia in Georgian population.

Method

The subjects in this study were a population who underwent health examinations at hospital in 2018. The urea breath test was used to detect Helicobacter pylori. The H.pylori breath test is a simple and safe test used to detect an active H.pylori infection. subjects without results of *H. pylori* infection status (anti-*H. pylori* IgG and IgM) were excluded. Subjects without data for mean cell volume (MCV) and hemoglobin, red blood cell (RBC), mean cell hemoglobin (MCH), and mean cell hemoglobin concentration (MCHC) were also excluded.

Results

The association between *H. pylori* infection and the type of anemia was analysed in this study. The levels of RBC, MCV, MCH, MCHC had significant differences between *H. pylori* (+) and *H. pylori* (−) groups. Significant differences were not detected between *H. pylori* infection and different anemia types in the all subjects model, female model and male model, on 28 days after eradication, when iron therapy was initiated, showed positive dynamics in more pronounced subgroup 1a patients. Subjective symptoms of anemia stopped somewhat faster. At day 56 of therapy, all

patients achieved target hemoglobin levels that were consistent with normal levels.

Conclusion

This study indicates that *H. pylori* infection may be related to anaemia and haemoglobin level in Georgian population. Eradication therapy in people with iron deficiency anemia allows for faster results, as evidenced by both laboratory parameters and objective data. According to the Maastrcht Consensus IV Regulation, all patients with iron deficiency anemia are recommended to be treated with Helicobacter pylori before ferrotherapy.

Impact statement

This study indicates that *H. pylori* infection may be related to anemia and other oncology disorders in Georgian population.