

## The relationship between *Helicobacter pylori* infection and anemia in pregnant women

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### Abstract

**Introduction:** Iron deficiency anemia has a high prevalence in women of reproductive age, especially in pregnant women (50%), with serious consequences on the mother and the fetus. Anemia is responsible for about 10-15% of all maternal deaths worldwide. There are different and sometimes contradicting reports on the role of *Helicobacter pylori* in causing anemia. On the other hand, *Helicobacter pylori* infection and its well-known complications are of high prevalence in developing countries. Therefore, the present study was conducted to determine the relationship between *Helicobacter pylori* and anemia.

**Materials & Methods:** This study was retrospectively conducted on 187 pregnant women who were at their third trimester and attended the Health Centers affiliated with Mashad University of Medical Sciences for prenatal care during 2006. Based on hemoglobin assessment done in the first trimester and kept in their health records, the participants were divided into two groups: anemic (94 women) and healthy (93 women) groups. Demographic information and nutrition questionnaires were completed. Tests for hemoglobin, ferritin, and *Helicobacter pylori* infection, using Elisa method for the detection of IgA and IgG, and antibody titration were conducted. The data from this study were analyzed by SPSS software, version 13, using descriptive (Mean, standard deviation and odds ratio) and inferential statistics (Independent t-test, chi-squared, Mann-Whitney test, analysis of variance and logistic regression). P-values less than 0.05 were considered significant.

**Results:** The subjects in the two groups did not have significant differences in terms of age, job, education, husband's education, husband's job, number of pregnancies and economic status. The rate of *Helicobacter pylori* infection showed a significant difference between the two anemic and non-anemic groups ( $p=0.01$ ). It was also shown that hemoglobin concentration and ferritin, during the third trimester of pregnancy in *Helicobacter pylori* infected cases were lower compared to that of the healthy ones ( $p<0.001$ ). On the other hand, the changes of hemoglobin during the first and the third trimesters of pregnancy in the two groups showed a significant difference ( $p<0.001$ ). The amount of hemoglobin during the third trimester of pregnancy in the *Helicobacter pylori* infected group had no significant increases in comparison to theirs at the first trimester, despite iron supplementation.

**Conclusion:** It seems that there is a relationship between *Helicobacter pylori* infection and anemia in pregnant women, therefore it is suggested that tests for *Helicobacter pylori* infection be included in pre-conceptual consultations, especially for women who have a history of anemia or persistent anemia, as this will be both wise and economic.

**Key Words:** Pregnancy, *Helicobacter pylori*, Infection, Anemia, Iron-deficiency, Hemoglobin, Ferritin, First trimester, Third trimester.

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