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Differences in serum homocysteine levels according to seropositivity of *Helicobacter pylori*

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Background & Aim: *Helicobacter pylori* (*H. pylori*), a gram-negative and microaerophilic bacterium with worldwide distribution, has been known to cause atrophic gastritis, peptic ulcers, gastric cancer and other various diseases. According to previous studies, *H. pylori* infection could lead to vitamin B12 and folate deficiencies. These nutrients are needed to process homocysteine. For this reason, our study aimed to see if there were differences in serum homocysteine levels according to seropositivity of *H. pylori*.

Methods: For individuals who attended a health promotion center in a university hospital from January 2011 to June 2012 and were aged 20 years or over, anthropometric measurement, basic blood tests, and serum anti-*H. pylori* IgG were measured in the fasting state. The homocysteine levels and related variables were identified in the groups. Then, serum homocysteine levels were compared between two groups according to seropositivity of *H. pylori* after adjusting for those associated factors.

Results: The serum homocysteine levels were 11.71 ± 3.54 $\mu\text{mol/L}$ and 10.38 ± 3.77 $\mu\text{mol/L}$ in the groups with and without anti-*H. pylori* IgG, respectively. This finding of higher serum homocysteine levels in the group with anti-*H. pylori* IgG remained significant after controlling for related variables as follows: BMI, waist circumference, hs-CRP, AST, ALT, BUN, creatinine, triglyceride, LDL-cholesterol, fasting blood sugar, HbA1c, and free T4 ($P < 0.001$ by ANCOVA).

Conclusions: When comparing the serum homocysteine levels between the groups with and without anti-*H. pylori* IgG, the group with the antibody showed higher serum levels of homocysteine than the group without it did.