

***TAS2R38* gene in relation to
Helicobacter pylori infection
and blood groups in different age groups**

Abstract:

Of the factors predisposing to gastric cancer is *Helicobacter pylori* infection affecting more than 50% of the general population. Genetic variation is an established player in certain diseases susceptibility. *TAS2R38* gene polymorphisms have been found to influence bitter taste ability to chemicals with malicious characteristics and consequently affect metabolism and disease development. This study aimed to investigate the correlation between *TAS2R38* gene polymorphisms and *H. pylori* seropositivity. The study involved 105 apparently healthy individuals. They were grouped into four groups according to their age and gender; young male, young female, middle-aged male and middle-aged female. All groups were tested for *H. pylori* serum antibody using screening rapid test. Participants were also tested for tasting PTC for *TAS2R38* gene detection by using Bartovation PTC test paper and grouped accordingly into: homozygote (highly bitter taste), heterozygote (slight to moderate bitter taste), or negative gene carrier (no taste at all). ABO and Rhesus- blood grouping was determined by standard serological analysis. Of the 105 patients, 22.85% were tested homozygotes for *TAS2R38* gene, 40.95% were heterozygotes and 36.19% were nontasters, no significant difference ($p > 0.9$). *H. pylori* seropositivity was encountered in 16.19% of the whole participants, 11.5% of the male participants and 20.75% of the female participants ($p > 0.9$). No significant difference in seropositivity was monitored among the four age groups ($p > 0.3$) and the ABO/Rh blood groups ($p > 0.9$). A lack of significant correlation ($r = 0.046$) between *H. pylori* antibody test positivity and tasting PTC (*TAS2R38* gene) was reported. Similarly, no association was found between PTC tasting and participants' ABO blood grouping, age or gender ($r = 0.086, 0.083$ and 0.029 , respectively). Yet, weak negative (reverse) relationship ($r = -0.29$, p -value = 0.002) was gained between PTC and Rh grouping. No correlation was revealed between *TAS2R38* polymorphism and the studied variable; age, gender and blood group indicating the absence of an apparent role of the gene in vulnerability to *H. pylori* infection. Further studies involving a larger sample size is required to confirm the obtained result.