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Effect of Helicobacter pylori infection on Sirt1 and Sirt2 gene expression in human gastritis samples

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Background and Aim : Helicobacter pylori, a major risk factor of getting gastritis in human, interact with host epithelial cells in the gastric lumen and alter the expression of a couple of genes and proteins in the sites of infection. The objective of the present study was to investigate the effect of H. pylori infection on the expression of Sirtuins, class III histone deacetylase proteins involving in the process of inflammation. To achieve this aim we compared the mRNA levels of sirtuin 1 (Sirt1) and sirtuin 2 (Sirt2) in H. pylori positive and negative gastritis samples **Methods :** Fifty samples including 25 H. pylori positive and 25 H. pylori negative biopsies were diagnosed by gastroenterologists at Tohid hospital of Sanandaj. The presence of infection verified by rapid urease test and histopathologic examination. The genotypes of H. pylori were determined by specific primer pairs of 4 genotypes cagA, vacA, HopQ1, and HopQ2 by PCR. Relative expression of Sirt1 and Sirt2 genes were performed by quantitative real-time PCR (qPCR) and normalized by GAPDH as a housekeeping gene. **Funding/Support:** This study was supported by the research deputy of Kurdistan University of Medical Sciences, Sanandaj Iran. **Results :** The obtained Ct values were quantified by 2^{-Ct} method and final expression were analyzed statistically using SPSS22 and presented by Graphpad Prism 6 software. The expression of Sirt2 gene, but not Sirt1, was significantly higher in H. Pylori positive samples compared to H. pylori negatives (p-value < 0.05). **Conclusion :** However, no differences were detected between the mRNA expression levels of the Sirtuin genes in tested genotypes. We concluded that Sirt2 could mediate chronic inflammation in gastritis with H. pylori infections and this is a new target for H. pylori that may be an important regulator of inflammatory responses of gastric epithelial cells to this infection **Keywords :** Helicobacter pylori, SIRT2, SIRT1, Gastritis.