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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.