Archives of Razi Institute

Articles in Press, *Accepted Manuscript*
Available Online from 23 November 2022

Upregulation of XRCC1 DNA repair gene, Interleukin-8, and Bcl-2 antiapoptotic gene levels in Kurdish patients with gastric adenocarcinoma

Document Type : Original Articles

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10.22092/ARI.2022.360240.2567

Abstract

Gastric cancer (GC) is one of the deadliest tumors due to its competence to invade and metastasize. The DNA repair gene (XRCC1), Interleukin-8 (IL-8) gene, and Bcl-2 gene perform a crucial role in the development and progression of GC. This study aimed to evaluate the expression of these target genes in GC patients In Kurdistan region of Iraq (KRG). Gastric cancer tissues were taken from 29 patients that were diagnosed with gastric adenocarcinoma that underwent gastric resection and 21 tissue samples were taken from healthy patients that underwent gastroscopy. The gastric tissues were collected in different hospitals in Erbil- and Sulaymaniyah city in the Kurdistan region of Iraq and data regarding the Helicobacter pylori (H. pylori), age, gender, and stage of the disease were recorded and analyzed using GraphPad Prism. The gene expression levels of XRCC1, IL-8, and Bcl-2 from gastric tissue were studied by quantitative Real-Time PCR (qRT-PCR). The result showed that H. pylori infection was equally distributed among males and females in the tissues of gastric patients, while most of the H. pylori-negative patients were females. It is also found that gastric patients from 30-60 years old are more commonly positive tested for the H. pylori test. Furthermore, in this study patients diagnosed with gastric inflammation are more often tested positive for H. pylori, while patients diagnosed with gastric cancer were all negative tested for this infection. Additionally, it found that the target

genes (XRCC1, IL-8, and Bcl-2) were significantly upregulated in GC patients compared to the healthy group.

Finally, our result revealed that of XRCC1, IL-8, and Bcl-2 were upregulated in the Kurdish patients with GC compared to the healthy control group, and targeting XRCC1, IL-8, and Bcl-2 genes might be interested field and promising strategy for cancer treatment.

Keywords

Gastric cancer, XRCC1, IL-8, Bcl-2 and gene expression

Main Subjects

- Anatomy

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