IL-11 and IL-11R α mRNA expression in gastro-duodenal disorders

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Background and objectives: Gastric cancer is the fourth most common malignancy in the world. It was demonstrated that IL-11 is increased in human gastric cancer; however, there are opposing results of the association between IL-11 expression and different gastric disorders. In this study we evaluated, the expression levels and the role of IL-11 and IL-11Ra in this disorders.

Methods: A consecutive series of 85 tissue specimens were collected from patients who underwent diagnostic endoscopy. Specimens divided to two groups [neoplastic and non-neoplastic] based on endoscopic and histo-pathologic assessments. The non-neoplastic samples were further classified into four groups: normal Oesophago-gastro-duodenoscopy (NEG), gastritis, duodenal ulcer (Du) and Gastro esophageal Reflux disease (GERD). The histological grade of the gastric cancer was determined on the basis of differentiation. Real- Time PCR was performed to detect gene expression.

Results: IL-11 and IL-11Ra expressions were 2.1-fold (p=0.008) and 1.8-fold (p=0.013) higher in gastric adenocarcinoma vs. benign disorders. Expression of these two genes was significantly enhanced in Gastric adenocarcinoma and Du by 3.5-fold (p=0.001) and 2.6-fold (p=0.014), respectively. Elevated expression of IL-11Ra but not IL-11 was seen in GERD group. There was no significant difference in IL-11and IL-11Ra expressions among various grades.

Conclusion: High IL-11 and IL-11Ra expressions revealed the role of this cytokine not only in gastric cancer development but also in gastric ulceration. IL-11 and IL-11Ra may not play role in tumor differentiation.

Key words: Interleukin-11 - Interleukin-11 Receptor α – gastritis - duodenal ulcer - gastric cancer

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