

Severity of Oxidative DNA Damage in Gastric Tissue of Smoker and Non-smoker Patients with Dyspepsia

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Abstract

Background and Objectives: Cigarette smoking is associated with an increase in risk of peptic ulcer and Gastro-Intestinal cancer. Toxic materials in smoke and tar have a significant role in production of carcinogenic complexes, injury to DNA and cellular proliferation in gastric cancer. The study was designed to compare the rate of injury to DNA in gastric tissue of smoker and non-smoker patients with active peptic ulcer.

Material and Methods: In this Case-Control study, the case group composed of 43 smoker patients aged 45.30 ± 13.16 with active peptic ulcer (14 female & 29 male) referred to gastroenterology clinic. The first control group consisted of 43 non-smokers without peptic ulcer (13 female & 30 male) with mean age of 42.67 ± 16.04 , and the second control group included 43 smokers without peptic ulcer (16 female & 27 male) with mean age of 44.58 ± 12.07 , and the third ones had 43 non-smoker patients with active peptic ulcer (20 female & 23 male) with mean age of 45.37 ± 13.39 . The rate of gastric mucosa DNA damage in the four groups was measured by calorimetrically method.

Results: The DNA damage in gastric mucosa of smoker patients with active peptic ulcer (28.05 ± 5.54 AP/100000bp) is higher than those of the three control groups ($p < 0.0001$ in all case).

Conclusion: Results of this study approve the direct relation between increase in DNA damage and toxic complexes existing in smoke and tar of cigarette.

Key Words: Cigarette Smoking, DNA Damage, Active Peptic Ulcer