

# Immunohistochemical expression of p53 in gastric carcinoma (A Clinicopathological study)

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## **Abstract**

**Background:** Carcinoma of the stomach is one of the most prevalent cancer types in the world today. P53 is the most notable tumor suppressor gene mutated in human cancers, including gastric cancer. The practical implication of this phenomenon in gastric cancer prognosis or even treatment by restoration of mutated p53 function are yet to be fully exploited.

**Objective:** To assess the immunohistochemical expression of p53 protein in gastric carcinoma and to study the correlation between p53 protein expression and different clinicopathological variables like: age, gender, site, gross pattern, histological type, grade, and stage of the tumor in gastric carcinoma cases.

**Materials and methods:** Forty formalin fixed paraffin embedded gastric carcinoma tissue blocks (partial or total gastrectomy specimens) from the archived materials of the Department of Pathology of Baghdad Teaching Hospital and the Center of Gastrointestinal and Hepatic Diseases, and other private laboratories were included in this study. A four micrometer – thick tissue sections were obtained and three slides had been prepared for each case, one was stained with Hematoxylin and eosin (H&E) and then reviewed, while two sections were stained immunohistochemically for p53. Statistical analysis was done using chi-square test for tables with frequencies, percentages, range, mean and standard deviation. Values were considered statistically significant when  $P < 0.05$ .

**Results:** A clinico-pathological assessment revealed that 28 patients were males and 12 patients were females. Male to female ratio was 2.3 /1. The age of patients ranged between 30-80 years with a mean  $\pm$  standard error of (55.77 $\pm$ 1.88 year). The majority of the gastric carcinoma cases, in this study (70%) were above 50 years of age. Large proportions of gastric carcinoma cases (80%) were located in the antral region while the remaining cases were located in the cardia region. The

ulcerative gross pattern was the most predominant gross pattern type (72.5%). Whereas the commonest histological type was the intestinal type (75%). The majority of the gastric carcinoma cases (62%) were moderately differentiated. Most of the gastric carcinoma cases (92.5%) fall in stage III disease. The overall expression of p53 in gastric carcinoma cases in the present study was (44%). No statistically significant difference was found between p53 overexpression with age and sex of patients ( $P > 0.05$ ). Although there was no significant correlation in the relationship between p53 overexpression with tumor site and gross pattern type, p53 positivity rate was higher in gastric carcinoma cases located in the antrum and in those cases of ulcerative gross pattern type. P53 overexpression was more commonly seen in gastric carcinoma case of intestinal type compared to diffuse type. However, the results were statistically not significant ( $P > 0.05$ ). P53 overexpression was more common in gastric carcinoma cases of moderately differentiated type compared to poorly differentiated type, with no statistically significant difference ( $P > 0.05$ ). Although the majority of gastric carcinoma cases which showed positive p53 expression were in stage III disease, these results were not significant ( $P > 0.05$ ).

**Conclusion:** The overall expression of P53 protein in gastric carcinoma cases in this immunohistochemical study was 44%. There was no significant correlation between p53 overexpression and different clinicopathological variables like: age, gender, gross pattern, histological type, tumor grade and stage.

**Keywords:** P53, gastric carcinoma, immunohistochemical expression

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