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## CAUDAL TYPE HOMEBOX 2 EXPRESSION AND PROGNOSTIC FACTORS IN PATIENTS WITH GASTRIC ADENOCARCINOMA

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### ABSTRACT

**Background:** The prognosis of cancer is affected by factors such as lymph node involvement, the degree of tumor invasion, and markers like caudal type homeobox 2. This study investigates the immunohistochemical expression of caudal type homeobox 2 in gastric cancer adenocarcinoma biopsies concerning gastric cancer prognostic factors.

**Material and methods:** Tissue blocks from patients with gastric adenocarcinoma were used in this cross-sectional study. Demographic and clinicopathological data were extracted and recorded on a checklist from patients' pathology reports. The expression of caudal type homeobox 2 was subsequently examined using immunohistochemistry.

**Results:** In total, 80 patients with gastric adenocarcinoma were included, where 22 were female (27.5%). Caudal type homeobox 2 expression was reported as positive in 68 cases (85%) and negative in 12 cases (15%) of gastric adenocarcinoma biopsies. No significant correlation ( $p > 0.05$ ) was found between caudal type homeobox 2 expression and demographic and clinicopathological data, such as age, gender, and tumor grade ( $p > 0.05$ ).

**Conclusion:** This study concludes that age, gender, and tumor grade are unreliable prognostic factors for Iranian patients with gastric adenocarcinoma.

**KEYWORDS:** gastrointestinal, stomach, caudal type homeobox 2, transcription factor, immunohistochemistry, prognosis.

### INTRODUCTION

Gastric cancer (GC) is the fifth most prevalent type of cancer and the fourth leading cause of death in 2020, with an estimated 800,000 deaths worldwide [Rawla P, Barsouk 2019; Ilic M, Ilic I, 2022; Morgan E et al., 2022]. Some direct and indirect factors, including tobacco use, age, genetics, H. pylori infection, dietary habits, and environmental conditions, can increase the risk of this cancer [Shah D, Bentrem D, 2022]. In the initial stage of gastric cancer, there are no diagnostic symptoms; however, symptoms such as heartburn,

nausea, bloating, and indigestion, appear after the cancer has spread. In addition, the advanced stage is characterized by pain, ascites, swallowing difficulties, jaundice, weight loss, and blood in the stool [Siegel R et al., 2023; Zhang Z et al., 2023]. Preventing and screening at-risk individuals before the onset of symptoms can reduce the cost of curing and diagnosing this cancer before its terminal stages [Sexton R et al., 2020]. In recent years, invasive and non-invasive procedures for detecting gastric cancer have been developed, which

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