Immunohistochemical Study of The Expression of TACC3 in Colorectal Carcinoma and its Correlation with Other Pathological Prognostic Factors

المشتركون فى البحث:
Mohamed Elmahdi , Ahmed Hosain, Reham S. E. Esmail, Hany Khattab

Abstract

BACKGROUND: Colorectal cancer (CRC) is the fourth most common cancer comprising nearly 10% of all cancer cases worldwide. Many tumor markers have been used to expect the prognosis of CRC. Transforming acidic coiled- coil-containing protein 3 (TACC3) is one of the TACC family proteins. Physiologically, TACC3 is an important protein in the process of cellular division as it plays a key role in the formation of the mitotic spindle. Pathologically, TACC3 expression was studied in CRC, being found to be a poor prognostic factor. AIM: The aim of the study was to study the expression of TACC3 and its relationship with other clinical and histopathological prognostic factors in patients with CRC.

METHODS: This is an observational and immunohistochemical study on 45 resection specimens from 45 CRC cases. This study was conducted at the pathology departments of the Faculty of Medicine, Cairo University, and Faculty of Medicine, Fayoum University from July 2019 to February 2020 Tumor tissues were prepared as formalin- fixed and paraffin-embedded specimens. The paraffin blocks were sectioned at the 5 microns thickness. Then, the collected sections were stained with hematoxylin & eosin for histopathological revision and immune-histochemical staining for TACC3 proteins.

RESULTS: The mean immunoreactivity score (IRS) for the TACC3 expression in our sample was 70 ± 89.91. TACC3 IRS score was significantly higher in those tumors with N2 stage (IRS = 175 ± 107.1; $p = 0.02$), and with Stage III tumors (IRS = 136.4 ± 93.5; $p = 0.04$). The other parameters showed no statistically significant relationship with IRS scores.

CONCLUSION: Immunohistochemical expression of TACC3 would be valuable as a prognostic marker in cases of colorectal adenocarcinoma, where the expression was found to show stronger and more widespread expression in cases with higher stages. Furthermore, TACC3 should therefore be considered as a potential candidate for targeted therapy, where its blockade may hinder the tumor's ability to proliferate and progress.

Keywords: Colo-rectal cancer;; Transforming acidic coiled-coil-containing protein 3; Prognosis; Immunohistochemical