

ANALYSIS OF ANTIAPOPTOTIC PROTEIN BCL2 BY IMMUNOHISTOCHEMISTRY AND ITS CORRELATION WITH THE PROGNOSIS IN PATIENT WITH COLORECTAL CANCER

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ABSTRACT : Colorectal cancer is one of the most common malignancies that can carry poor outcomes and need certain markers for prognosis and treatment. The immunohistochemical expression of antiapoptotic protein (BCL2) and its association with the type of carcinoma, grade and stage can predict prognosis. This is a retrospective study was carried out in Gastroenterology center and pathology department, Baghdad medical city during the period from February to October, 2020. Colectomy specimens were collected which include biopsies or endoscopic mucosal resection or polypectomy. Demographic data of the patients including age, sex, histological type, grade and stage of the tumor were obtained. Immunohistochemical staining of BCL2 is regarded as positive if the staining is cytoplasmic and taken as “percentage of positive tumor cells to the whole tumor cells”. Fifty three cases were included in this study. Median age of the patients was 57 years and male to female ratio was 1.8:1. BCL2 positivity was seen in 28.3% of the cases. Weak, moderate, and strong expression of BCL2 was seen in 9.4%, 11.3% and 7.5% of cases, respectively. Early stages of colorectal carcinoma showed greater frequency of BCL2 expression than advanced stages (22% versus 9%) and this correlation was not statistically significant. The study shows no significant correlation between BCL2 overexpression and colorectal carcinoma stage and grade, so we concluded that BCL2 expression may be not important prognostic marker for colorectal carcinoma.

Key words : BCL2 gene, colorectal carcinoma, immunohistochemistry, protein expression.

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INTRODUCTION

Colorectal cancer (CRC) is one of the most common malignancies especially in developed countries (the third most common in men and the second in women) that carry high mortality worldwide especially in high grade or stage cases, because such cases carry a poor outcome even after surgical resection. The etiology of colorectal cancer is multifactorial, including genetic and environmental factors (Leslie, 2003), Colorectal carcinoma may developed as a result of variety of changes including genetic mutations. These mutations occur in many tumor suppressor genes (APC, DCC and TP53 genes) and proto-oncogenes (K- ras and C-myc gene) that leading to inhibition of genes that responsible for cancer suppression and genes of DNA mismatch repair or oncogens activation (Zekri, 2017; Pazour, 2000).

Identification of prognosis by certain tumor markers is mandatory and the most common predictor for treatment in colorectal carcinoma is the stage in addition

to others less dependable factors like grade, histological type, vascular invasion and surgical margins (Vasile, 2012). The accumulation of multiple genetic alterations including BCL2 can lead to tumorigenesis (Hegazy, 2014; Papagiorgis, 2012; Luderer, 2015). BCL2 is a 26-KD, antiapoptotic protein that inhibit programmed cell death (apoptosis) (Hockenbery, 1990; Korsmeyer, 1992; Vaux, 1993) and can lead to neoplastic transformation. Initially, it was found in follicular B cell lymphoma and then discovered in other malignancies (Beer, 1998; Benetti, 1992). Its expression can be detected by immunohistochemistry (IHC). The objective of this study is to evaluate BCL2 protein expression in different histopathological types of colorectal carcinoma and its correlation with clinicopathological characteristics and also it's utility as a prognostic tumor marker.

MATERIALS AND METHODS

This is a retrospective study was carried out in Gastroenterology center and Pathology Department,