

higher in non mucinous tumors compared with the mucinous type and this reflects the well known aggressive behavior and bad prognosis associated with the mucinous type. These results are in disagreement with the results of Dursun et al., 2001⁽²⁵⁾ who found a significant relation of bcl₂ expression with the mucinous type tumor and this may be explained by small sample size in the present study. These results are expected since most of the mucinous tumors which were negative for bcl₂ expression were associated with high grade and late stage malignancy.

Taking into account tumor greatest diameter, the extent of bcl₂ expression by tumor cells decreased significantly with respect to increasing tumor greatest diameter. This result is in agreement with Ofner et al., 1995⁽²⁶⁾. This can be explained by the fact that large tumors may be related to other bad prognostic parameters as poor differentiation, advanced stage, high grade, and positive lymph node status.

Regarding the tumor location, none of the cases in the present study were in the proximal colon, this may be due to the fact that tumors in the proximal colon usually present late in the course of the disease and they attain a large size before clinical detection in addition to that they are far from digital and proctosigmoidoscopic examination and they may be beyond surgical treatment on discovery. The relationship between bcl₂ expression in the distal colon and the rectum was not statistically significant. These results are in agreement with others as Dursun et al., 2001⁽²⁵⁾, Tollenaar et al, 1998⁽¹⁷⁾, Husain et al, 1999⁽²⁰⁾ and Huang et al, 2002⁽²¹⁾.

There was a negative correlation between bcl₂ expression and lymph node status. These results are in concordance with the results of Dursun et al, 2001⁽²⁵⁾ and Goussia et al,

2000⁽²⁷⁾, that bcl₂ expression was more in lymph node negative tumors.

Bcl2 expression in colorectal carcinoma was associated with better clinical course especially when p53 expression was absent suggesting that neoplastic transformation related to inhibition of apoptosis results in less aggressive malignancies than those dependent on other oncogenes as p53⁽²⁶⁾. An inverse relation between bcl₂ and p53 has been observed in other malignancies suggesting that these proteins may interact through opposite mechanisms: inhibition of apoptosis (bcl₂) and promotion of apoptosis (p53)⁽¹⁹⁾.

Conclusion

Bcl2 expression in colorectal carcinoma is correlated with low grade tumor, early tumor stage, non mucinous type, small tumor size and negative lymph node status.

References

1. Steinert R, Buschmann T, Van-der-Linden M, Fels LM, Lippert H, Reymond MA: The role of proteomics in the diagnosis and outcome prediction in colorectal cancer. *Technol-Cancer Res. Treat.*2002; 4:297-304.
2. Garner EW, Ignatenko NA, Besselsen DG: Preclinical models for chemoprevention of colon cancer. *Recent Results Cancer Res. Treat.*2003; 163:58-71.
3. Grady WM: Genetic testing for high risk colon cancer patints. *Gastroenterol.* 2003; 124:1574-94.
4. Megan M, Garrity L J, Burgart MR, Mahoney HE, Salim M, Wiesenfeld JE, Krook JC: Prognostic value of proliferation, apoptosis, defective DNA mismatch repair and p53 overexpression in patients with resected Dukes' B2 or C colon cancer. *J.Clin Oncol.* 2004; 22(9): 1572-1582.
5. Compton CC, Taylor CK, Welton M, willet C, Fielding LP, Burgart LJ, Hamilton SR, Hammond ME, Henson DE, Hutter RV, Nagle RB, Nielsen ML, Sargent DJ: Prognostic factors in colorectal cancer. College of American Pathologist consensus statement, 1999. *Arch Path Lab Med.* 2000; 124:979-94.
6. Berci C, Bocsi J, Bartha I, Math J, Balazs G: Prognostic value of DNA ploidy status in patients with rectal cancer. *Anticancer Res.*2002; 22:3737-41.