Summary

This study aims first, at evaluation of nm23 protein in colorectal carcinoma. Second, to compare and correlate the findings with other clinico-pathological variants such as age, sex, site, tumor grade and stage, lymph node metastases and distant metastases . Statistical analysis and correlations were made for all of these variants.

This retrospective study was carried upon 56 Egyptian patients with different colorectal lesions. The patients were admitted to Benha University Hospital and National Cancer Institute during the years 2003- 2005.

This study included 56 cases colorectal lesions: 50 cases of colorectal carcinoma and 6 cases of chronic non-specific colitis taken as a control.

Among the 50 examined cases of colorectal carcinoma there were 27 adenocarcinomas, 14 mucoid carcinomas, 4 signet ring carcinomas, two squamous carcinoma, two neuroendocrine carcinoma and one undifferentiated carcinoma . These cases included 24 females (48%) and 26 males (52%) with age ranged between 21 and 77 years, The mean age for all studied cases was 52.2±15.6 years.

Malignant tumors were graded into: low grade tumors (23 cases) and high grade tumors (27 cases). SEER staging system was applied for each tumor case. Lymph node metastases and distant metastases were obtained for every case.

Lymphovascular invasion was detected by the aid of PAS special stain, out of 50 cases there were 27 cases showed positive lymphovascular invasion and 23 cases showed negative lymphovascular invasion .

Among the 50 cases of malignancy, 20 cases had no lymph node metastases (N0), 22 cases belonged to N1 state, 8 cases to N2 state. There were 43 cases without evident distant metastases and 7 cases with distant metastases.

Regarding SEER stage, there were 3 cases of stage 0, there were 9 cases of stage I, 5 cases of stage II , 22 cases of stage III and 11 cases of stage IV.

Nm23 protein was detected by immunohistochemical staining technique. All control cases showed positive nm23 expression as diffuse browen colored granular cytoplasmic staining, mainly in the basal parts of the

crypt more than in the superficial parts. Nm23 expression was positive in 32/50 examined cases while 18 cases showed negative nm23 expression.

Among studied CRC cases, positive nm23 expression was recorded in 81.5% of adenocarcinomas in comparison to 57.2% of mucoid carcinomas, 0%of signet ring carcinoma, 50% of squamous carcinomas, 0% of nueroendocrine carcinomas, 100% of undifferentiated carcinoma.

In cases of low grade carcinoma, positive nm23 expression was recorded in 82.6% of cases, while positive nm23 expression was decreased to be 48.2% in cases of high grade carcinoma. This was explained by loss of tumor suppressor function of nm23 with rising grade of carcinoma.

There was high statistically significant positive correlation between nm23 expression of the studied cases and the following variables: the histopathological type (p=0.022), tumor grade (p=0.011) and the lymphovascular invasion (p= 0.005).

Lymphovascular invasion was statistically significant positive correlation to histopathological type (p=0.093), depth of tumor invasion (p=0.011) and SEER stage (p= 0.047).

There was no significant correlation of nm23 protein to age, sex, depth of tumor invasion, lymph node metastasis, distant metastasis , SEER staging system or survival.

From all the above data we found that nm23 protien role in prognosis of colorectal cancers is still obscure. As, there was no significant relation between nm23 expression in the primary tumor and survival, but there was significant statistical relation of nm23 to lymphovascular invasion which is considered as a very important step in metastasis cascade.

Conclusion

- Nm23 is a tumor metastasis suppressor gene that may be involved in early steps of colorectal tumorigenesis. Reduction of nm23 expression occurs with rising grade of malignancy.
- There was Positive statistically significant correlation between nm23 expression and type, grade and lymphovascular invasion.
- There was no statistically significant relation of nm23 to patient age, sex, tumor site, nodal or distant mtestasis.
- There was Positive statistically significant correlation between lymphovascular invasion and histopathological type, depth of tumor invasion and SEER stage the later was statistically significant correlation to two years survival.
- Detection of nm23 in colorectal lesions is a time consuming process with a little value obtained as it gave insignificant correlations with most of data collected for each of the studied cases.
- A good correlation of nm23 to prognosis is predicted as nm23 was significantly correlated to lymphovascular invasion which is a very important step in metastasis casecade, that had an important prognostic value in colorectal cancer.

- So, it is recommended to repeat the study with larger number of cases and to correlate nm23 expression with vascular markers to differntiate between lymphatic vascular channels and blood vascular channels and also to correlate nm23 relation to matrix enzymes.