

Colorectal cancer (CRC) is the second-leading cause of cancer-related mortality in the world, on the other hand gastric cancer (GC) is the fifth most commonly diagnosed cancer worldwide and the third-leading cause of cancer-associated mortality. The present study is designed to determine the serum levels of postoperative Carcino-Embryonic Antigen (CEA), Carbohydrate antigen 19-9, Folic acid, Vitamin D, Selenium (Se), copper (Cu), cobalt (Co), cadmium (Cd), nickel (Ni), and lead (Pb) in patients with colorectal and gastric cancer. In addition, immunohistochemical analysis for Delta-like 1 homolog protein (DLK-1) and Adenomatous polyposis coli (APC) protein were achieved, and see if there is a link between CRC and GC and each of the variables evaluated

The study includes (90) men and women which are divided into three groups: (30) patients of colorectal cancer with age range (30—70) year, (30) patients of gastric cancer with age range (35 –70) years and (30) supposed healthy subjects (control) with age range (30 –70) years

The results show that there is a significant increase in serum concentrations of each carcino-embryonic antigen, carbohydrate antigen 19-9, Cd and Pb in colorectal and gastric cancer patients in comparison with (control) group at ( $P < 0.05$ ). Also a significant decrease in serum concentrations of Co in colorectal and gastric cancer patients. Regarding folic acid the results show that there is a significant decrease in its serum concentration in colorectal cancer patients. On the other hand, we found that the copper concentration was low in colorectal cancer patients. While it was found that the selenium concentration was significantly low in gastric cancer patients compared to the control group. It was also found

SummaryXIVthat the level of nickel is significantly high in colorectal cancer patients compared at ( $P < 0.05$ ) to the control group

For histopathological detection number of studied cases were 30 cases with colorectal cancer, 30 cases with gastric cancer, and 20 cases as control. Colorectal cancer results showed that 8 cases (26.6%) were stage II, 20 cases (66.6%) were stage III and 2 cases (6.6%) were stage IV, also our results showed that the 24 cases (80%) of colorectal cancer were moderately differentiated and 6 cases (20%) were poorly differentiated

Histopathological study of gastric cancer showed that 7 cases (23.3%) were stage II, 21 cases (70%) were stage III and 2 cases (6.6%) were stage IV, also our results showed that the 27 cases (90%) of gastric cancer were moderately differentiated and 3 cases (10%) were poorly differentiated

Results of colorectal cancer immunohistochemical analysis show that 26 cases which were positive stain for DLK-1; staining with score +++ was seen in 25 (83.3%) cases and score ++ was seen in one case (3.3%), on the other hand four (13.3%) cases of colorectal carcinoma were negative

Results of gastric cancer immunohistochemical analysis for DLK-1 show that the 22 cases which were positive stain for DLK-1; staining with score +++ was seen in 15 (50%) cases and score ++ was seen in 7 case (23.3%), on the other hand 8 (26.6%) cases of gastric cancer were negative

Results of colorectal cancer immunohistochemical analysis for adenomatous polyposis coli were as follows: classified the cases of carcinoma, and control groups into different scores (-, +, ++ and y(+++

showed a significant difference ( $P \leq 0.05$ ). Thirty cases which were positive stain for adenomatous polyposis coli; staining with score +++ was seen in 17 (56.6%) cases and score ++ was seen in 13 case .(43.3%), on the other hand no cases of colorectal cancer were negative

Results of gastric cancer immunohistochemical analysis for adenomatous polyposis coli were as follows: eighteen cases were positive stain for adenomatous polyposis coli; staining with score +++ was seen in four (13.3%) cases and score ++ was seen in 14 cases (46.6%), on the other hand 12 .(40%) cases of gastric cancer were negative

In conclusion (46.66 % and 60 %) of postoperative CRC and GC patients respectively, show a high levels ( $>5$  ng/ml) of CEA, these results maybe indicate to the recurrence of the disease. The increasing of CA 19-9 was over than the cutoff value ( $>37$  ng/ml) in (43.33 % and 53.33 %) of postoperative CRC and GC patients respectively, presence of high CA19-9 levels after tumor resection may be the consequence of possible residual tumor, which can result in the disease recurrence. A decrease in the concentrations of folic acid in the sera of the CRC patients might play a .role in cancer development among patients

The present findings suggest that imbalance in Cu, Co and Se trace elements levels that associated with CRC and GC might play an important role in cancer development among patients. According to our findings, elevated levels of Cd, Ni, and Pb may have a role in the pathogenicity of CRC and GC. Immunohistochemistry data revealed that APC and DLK-1 may play an important role in human CRC and GC carcinogenesis, and that they could be used as a tumor markers help in the diagnosis of the .colorectal and gastric cancers

Chapter One