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RELATIONSHIP OF EXPRESSION OF C-MYC AND BRANCHED-CHAIN AMINOTRANSFERASE IN HUMAN GASTRIC CANCER CELLS AND TISSUES.

Tetsuya Kato, Hidemi Goto, Tomiyasu Arisawa, Yasumasa Niwa, Naoki Ohmiya, Tetsuo Hayakawa, Yoshiharu Shimomura, Nagoya Univ Sch of Medicine, Nagoya, Japan; Nagoya Institute of Technology, Nagoya, Japan.

Background.Branched-chain aminotransferase (BCAT) catalyzes the first reaction in the BCAA catabolism in mammals. It was demonstrated that there are two isoforms of mammalian BCAT, mitochondrial (BCATm) and cytosolic (BCATc). The cytosolic enzyme is expressed in brain, ovary, and placenta in normal tissues, and the mitochondrialenzyme is the predominant isozyme expressed in the organs other than brain. It was demonstrated that the BCATc, but not BCATm, gene is one of the target genes of c-myc, aproto-oncogene, which is a transcription factor regulating expression of genes important for cell proliferation and differentiation. Itwas reported that c-myc is overexpressed in about 70%of gastric cancer tissues.In the present study, we investigated expression of mRNAs for c-myc, BCATc, and BCATmin human gastric cancer cells and tissues. Method. MKN45 and KATOIII were used as human gastric cancer cell lines. Human gastric mucosal tissues with cancer were obtained from 9 patients and those with gastritis were from 8 patients by endoscopic biopsy. Expression of mRNA was measuredby the method of polymerase-chain reactioncoupled with reverse transcription (RT-PCR). Results. Expression of c-mycmRNAwas detected in both cell lines but was greater in MKN45. Expression of BCATcmRNAwas detected in KATOIII, but not in MKN45, whereas expression of BCATm mRNA was detected only in MKN45. In the analyses of human gastric tissues, it was observed that c-myc mRNA was expressed in all of the tissues examined, but overexpression of the mRNA was detected in the 5 tissues with cancer. On the other hand, expression of BCATcmRNAwas detectedin 4 tissues with gastric cancer,in which only one tissue had the overexpression of c-myc mRNA.Expression of BCATc mRNAwas not detected in all tissues with gastritis.BCATm mRNA expression was detected in all tissues with cancer or gastritis. Conclusion-.These results suggest that there is no correlation between expression of mRNAs for c-myc and BCATc in these tissues and that expression of BCATc in gastric cancer cells and tissues is regulated in a manner independent of c-myc expression.

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EFFECT OF LOW DOSE OMEGA-3 FATTY ACID ON RECTAL MUCOSAL CELL PROLIFERATION IN PATIENTS AT HIGH RISK OF COLORECTAL CANCER.

Kourosh Khosraviani, Helen Weir, Kate Williamson, Peter Hamilton, John Moorehead, Acad Univ, Belfast, United Kingdom.

AIMS There is evidence that high doses of omega-3 fatty acid has a protective effect on colonic mucosa of patients at high risk of colorectal cancer (CRC). We aim to determine the effect of lower dose of omega-3 fatty acid supplemention on rectal mucosal cell proliferation , as a biomarker of colon carcinoma. METHODS Patients (n=11) with recurrent adenomatous polyps of the colon underwent rigid sigmoidoscopy with biopsy at 10 cm from anal verge one week following colonoscopy and polypectomy. Six patients were randomised into the treatment group and received a dietary supplement of 1200mg fish oil for three months, the remainder received a placebo. Rigid sigmoidoscopy and biopsy was repeated at 4 weeks, 12 weeks and 18 weeks, from start of the supplementation. Each biopsy was immediately incubated in culture medium enriched with bromodeoxyuridine (BrdU) for 60 minutes. Biopsies were fixed in 70% alcohol and processed to paraffin blocks. Sections of 4μm were taken at 40 μm apart to avoid the same cells being sectioned twice. The S phase cells which incorporated BrdU into their DNA were identified following immunohistochemical staining. Counter staining with haematoxyline was performed to identify non labelled cells. Well orientated crypts were identified for each time point and the number and position of labelled and non labelled cells were noted. The labelling Index (LI) was calculated for each hemicrypt by dividing the number of labelled cells by the total number of cells. Each hemicrypt was divided into five compartments from base to luminal surface and the LI was calculated for each. The LI for the upper two compartments were combined. CONCLUSION Dietary supplementation with a lower dose of omega-3 fatty acid reduces rectal mucosal cell proliferation in patients with high risk of CRC. This effect is similar to one produced by a high dose omega-3 fatty acid and may be associated with fewer side effects.

RESULTS

Time (weeks)	0	4	12	18
Control LI	0.093(0.008)	0.090(0.006)	0.096(0.007)	0.091(0.004)
Omega-3 LI	0.103(0.006)	0.090(0.005)	0.080(0.005)*	0.083(0.005)

Mean (SEM) * p<0.05 Student t test (time=0 v time=12)

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EXPRESSION OF INDUCIBLE NITRIC OXIDE SYNTHASE(INOS) IN HUMAN COLON CANCER TISSUE.

Jeong Wook Kim, Seoung Hyeock Han, Hyun Joo Jeong, Jae Hyuk Do, Sae Kyung Chang, Coll of Medicine, Chung-Ang Univ, Seoul, South Korea; Cent Research Lab Yong San Hosp, Seoul, South Korea; Coll of Medicine, Seoul, South Korea.

Backgrounds and Objectives: Nitric Oxide(NO) has played an important role in vivo depend on various physiological and pathological conditions. NO is produced by several NO synthase(NOS) types, such as inducible NO synthase(iNOS), in several types of cancers. Increased expression of iNOS in squamous cell cancer of head and neck, brain cancers, breast cancers and gynecological cancers has been reported. However the expression of iNOS in human colon cancer tissue remains controversal. The aim of this study was investigated the expression of iNOS in human colon cancer tissues and to find out the clinical significance of its expression in terms of clinicopathological parameters such as tumor mass, stage and histology. Methods: We investigated iNOS mRNA expression in 24 human colon cancer tissues and normal human colon tissues by reverse transcription-polymerase chain reaction(RT-PCR) and the Southern blot and then examined the expression of iNOS protein by immunohistochemical staining. Results: RT-PCR and Southern blot analysis showed the iNOS mRNA was detected in all cases of colon cancer tissues and also iNOS protein is expressed diffusely and strongly stained in the cytoplasm of colon cancer tissues. But there was no significance between the overexpression of iNOS mRNA and clinicopathological parameters. Conclusion: iNOS mRNA and protein are overexpressed in human colon cancer tissue and may contribute to the important role in carcinogenesis of human colon cancer.

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PALLIATION OF MALIGNANT COLORECTAL OBSTRUCTION WITH EXPANDABLE METAL STENT.

Hyung Gil Kim, Sun H. Kim, Jin W. Lee, Won Choi, Don H. Lee, Pum S. Kim, Yong W. Shin, Young S. Kim, Soon K. Cho, Sung K. Kang, Dept of Internal Medicine, Inha Univ Hosp, Inchon, South Korea; Dept of Radiology, Inha Univ Hosp, Inchon, South Korea.

Background:In patients with acute colorectal obstruction secondary to malignant colorectal carcinoma, single stage curative surgery carries high mortality and morbidity, so two stage procedure is commonly performed. We studied to evaluate the usefulness of self-expandable metal stents for immediate bowel decompression to perform single stage surgery in potentially curable disease, and for palliation in unresectable disease. Methods:In 23 patients with clinical and radiologic signs of acute colonic obstruction secondary to colorectal malignancy, metal stents(Song retrievable rectal stent®, StentechInc., Seoul, Korea) were placed with fluoroscopic guidance and occasional endoscopic assistance. The sites of obstruction were rectum in 19, rectosigmoid junction in 3, and sigmoid colon in 1. There were 11 women, mean age of 64 yrs. 18 patients with primary colorectal cancer underwent stent placement for presurgical decompression, and 5 patients for palliative decompression; 1/5 had stomach cancer with rectal metastasis, 1/5 had double primary cancer in cervix and rectum. 3/5 had advanced colorectalcancer. Results:Stent placement was successful in all patients. 18 patients for presurgical decompression underwent elective single stage resection and primary end to end anastomosis without major complication 1-11days(mean 5days) after stent placement. Stent migration occured in 3/18, and stent replacement was done in 2. In 5 patients for palliative decompression, the mean follow up was month; 4/5 had distal stent migration, and 1/5 had anal pain. Conclusion: Self-expandable metal stent placement is a effective therapeutic alternative in acute colorectal obstruction secondary to malignant colorectal neoplasm, allowing single stage surgery in curable cases. Stent migration is a significant problem in unresectable cases.

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ULTRASONICALLY GUIDED PERCUTANEOUS MICROWAVE COAGULATION THERAPY FOR HEPATOCELLULAR CARCINOMA - PRELIMINARY REPORT.

Young Seok Kim, Bong Min Ko, Jong Ho Moon, Young Deok Cho, Yun Soo Kim, Moon Sung Lee, Chan Sup Shim, Institute for Digest Research, Soon Chun Hyang Univ, Seoul, South Korea.

Background: Even though surgical resection has been the treatment of choice for small HCC, hepatic resection is not always feasible in patients with advanced liver cirrhosis because of impaired liver function. Therefore, various non-surgical treatment modalities including percutaneous ethanol injection therapy(PEIT), transarterial chemoembolization(TACE) and hepatic cryosurgery have been developed. Purpose: To evaluate the efficacy and safety of percutaneous microwave coagulation therapy (PMCT) for the treatment of single hepatocellular carcinomas measuring 3.0 cm or less in