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CLINICAL EVALUATION OF CARCINO-EMBRYONIC ANTIGEN AND TISSUE POLYPEPTIDE ANTIGEN IN PLEURAL EFFUSION,ASCITES,AND BILE

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Carcinoembryonic Antigen (CEA) and Tissue Polypeptide Antigen (TPA) levels in pleulal effusion, ascites, and bile were measured by radio-immunoassay technigue to evaluate clinical value of these two tumor associated antigens in the body fluids. The body fluids were obtained from 64 patients with malignant or benign disease. Reproducibilities, and recovery tests of the body fluids proved to be less reliable than those of sera, especiaaly in bile. There was no significant correlation between CEA levels and TPA levels in the body fluids. TPA levels in the body fluids were so high both in malignant and benign diseaes that it was difficult to set cut-off value like in serum levels, but it was suggested measure of TPA levels in the body fluids may be useful in monitoring therapeuetic effects or progress of the disease.

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CORRELATION BETWEEN SERUM CA19-9 LEVELS AND LEWIS PHENOTYPE IN NORMAL SUBJECTS.

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CA19-9 is a very useful tumor marker for pancreatic carcinoma and other malignant tumors. Since CA19-9 is a sialylated Lewis A (Le^a) antigen, serum CA19-9 concentrations have been considered to be related to Lewis blood group antigens. We examined the relationship between serum CA19-9 levels and Lewis phenotype in normal healthy subjects.

Serum CA19-9 level was 40.8±19.3 U/ml in Le(a+b-) group (N=10) and 11.4±3.0 U/ml in Le(a-b+) group (N=20). On the other hand, CA19-9 was almost undetectable in Le(a-b-) group (N=10). Individuals with Le(a-b-) phenotype lack an enzyme that catalyzes the synthesis of the common sugar sequence of Lewis antigens and CA19-9. As a consequence, it is considered that they can not synthesis CA19-9. Furthermore, when sera or their IgG fraction obtained from some Le(a-b-) subjects were added to the assay system, the recovery of CA19-9 was very poor. Polyclonal antisera against Le^a or Le^b also caused similar results in recovery studies. Some Le(a-b-) subjects seemed to have anti-Lewis antibody which would cross-react with CA19-9.

These results indicated a close correlation between CA19-9 and Lewis blood group antigens.

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Ganglioside pattern in liver tissues and distribution of Ca 19-9 on thin-layer chromatogram

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Gangliosides were isolated from human liver tissues with various liver diseases and specific gangliosides which are capable to bind Ca19-9 antibody were identified on one and two-dimensional thin-layer chromatography using the method of autoradiography.

Ganglioside pattern of normal tissues was the predominance of GM3 and other minor components on thin-layer chromatogram. While, ganglioside patterns of hepatocellular carcinoma and certain type of liver cirrhosis were found to be complicated as compared with those of normal liver. These characteristic features were marked increased amount of GM2 and several unidentified gangliosides. On the study of autoradiography, there were two strong bands which had activity of 123-I Ca19-9 in normal tissue on chromatogram. These bands had only negligible amounts of ganglioside componet in the normal tissue.

Thus, these findings suggest that normal tissue as well as hepatocellular tissue have a ganglioside component designated as sialylated lacto-fucopentaose II, Ca19-9 a d it's metabolic pathway.

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EVALUATION OF SERUM CA19-9 IN PATIENTS WITH PANCREATIC AND OTHER GASTROINTESTINAL MALIGNANCIES.

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Although many diagnostic methods have been developed, Pancreatic disease is difficult to diagnose correctly.

Recently, CA19-9 was detected as new gastrointestinal tumor-associated antigen, especially as pancreatic cancer.

We have tested serum CA19-9 of 120 patients with gastrointestinal diseases in our hospital during last one year, and compared the positive rate of each tumor markers.

The reference range of 20 normal adults was less than 5.5 U/ml to 21.5 U/ml (8.7 ± 6.2 U/ml).

When serum CA19-9 level higher than 30 U/ml were regarded as positive, it was found predominantly in sera of gastrointestinal malignancies, especially in pancreatic cancer.

We thought that serum CA19-9 was the most reliable tumor marker with high sensitivity and specificity for diagnosis of pancreatic and biliary tract cancer.