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A PROMISING TUMOR MARKER CA19-9 FOR PANCREATIC CARCINOMA: COMPARISON WITH CEA AND ELASTASE 1. H.Sakahara, K.Endo, K.Nakajima, T.Nakashima, H.Ohta, and K.Torizuka. Department of Nuclear Medicine A.Naito and T.Suzuki. Department of Surgery, Kyoto University, Kyoto.

Serum levels of CA19-9 were compared with those of CEA and elastase-1 in 51 cases with histologically proven duct adenocarcinoma of the pancreas (PC) and 17 cases with chronic pancreatitis. Serum levels were determined by using RIA kit obtained from CIS, France (CA19-9 and CEA) and Dainabot (elastase-1). The sensitivity, specificity and accuracy for the diagnosis of untreated PC were as follows.

	CA19-9	CEA	elastase-1
cutoff value	37U/ml	15ng/ml	400ng/100ml
sensitivity	81%	65%	60%
specificity	85%	77%	46%
accuracy	82%	68%	57%

CA19-9 gave the highest accuracy among tumor markers we have studied and serum levels were markedly elevated over 100U/ml in 36 (71%) cases with PC, whereas none in chronic pancreatitis. However, serum CEA levels were not so increased in most PC and elastase-1 was not useful for the differentiation of PC from chronic pancreatitis.

In conclusion, CA19-9 was thought to be a superior tumor marker to CEA and elastase-1 for the diagnosis of PC.

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STUDIES ON CA 19-9 ANTIGEN IN SERUM, BODY FLUIDS AND STOOL. M.Ishida, Y.Kajita, Y.Nakashima, T.Miyazaki, M.Hamazu, Y.Ura and Y.Ochi. Nantan hospital, Kyoto prefect. Univ. of Med., Kyoto and Shiga Univ. of Med.Sci., Shiga.

The usefulness of serum CA 19-9 as a tumor marker for pancreas, stomach, colon, bile, bile duct and lung cancer was confirmed. CA 19-9 levels in bile from patients with bile duct cancer or pancreas cancer were extremely high, although bile from patients with benign diseases were high. Pancreatic juice, ascites and pleural effusion in malignant diseases showed high CA 19-9 levels. However, fluids in thyroid cyst had high levels in spite of benign disease. Tracer amounts of CA 19-9 were also found in normal human urine. Meconium showed extremely high CA 19-9 levels that was perchloric acid soluble, while normal human stool had trace amounts. When a standard solution of Le^a and Le^b substance (Ortho Lab) was treated with neuramidase, CA 19-9 was not detected. This indicates that monoclonal antibody for CA 19-9 does not reactive with Lewis antigen. CA 19-9 activity in serum, bile, fluids in thyroid cyst and meconium was found in the void volume by gel-filtration study on Sepharose 2B. No binding of Con A with CA 19-9 in meconium, serum in cancer patient and bile in bile duct cancer was observed. This experiment suggests that increased CA 19-9 antigen on tumor cell surface may be released as the form of glycolipid or glycoprotein of over 4x10⁶ daltons.

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CLINICAL EVALUATION OF CA19-9 IN THE SERUM FROM CANCER PATIENTS.

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CA19-9 (Carbohydrate Antigen 19-9) which is the gastrointestinal tumor-associated antigen is noted as a new tumor marker CA19-9 of serum from patients with various malignant disease were assayed and the relation between CA19-9 and other tumor markers were examined. Among cancer patients, there were 47 gastric cancer patients, 34 colorectal, 13 biliary, 9 pancreatic, 34 breast, and 18 thyroid cancer. CA19-9 of serum from 20 healthy donors and 23 biliary stone patients were examined. CA19-9 level of healthy donors was 8.05±6.46U/ml and that positive rate is 0% (Cut off level: 37U/ml). Mean level and positive rate of various cancer sera are higher than those of healthy donors. Especially the average CA19-9 level from biliary cancer patients was significantly higher than that of healthy donors (p<0.001, p<0.01). Average level of CA19-9 in serum from gastric cancer patients was examined to detect the relation in each stage or those factors (s, H, P, n). But no relation was found. There was no correlation between CA19-9 and other tumor markers such as CEA, TPA in various cancer patients. From this result, it is suggested that combination assay with some tumor markers will be helpful for elevating the accuracy of the cancer diagnosis.

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BASIC AND CLINICAL STUDIES USING THE PROGIFIGENR TPA (TISSUE POLYPEPTIDE ANTIGEN) KIT AS A TUMOR MARKER.

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TPA, which was discovered by Bjorklund, et al. in 1957, has recently been attracting attention as a new tumor marker. The present paper is a report on use of the TPA kit by the authors.

- Results
1. 'Within Assay Variation': 4.6 - 6.3%
'Between Assay Variation': 5.1 - 9.9%
 2. The dilution test resulted in a straight line which went through the origin point, within the scope of 1500 u/l.
 3. Range of healthy people:

Sex	Number of cases	Mean	S.D.	Range
Male	101	62.6±21.0	20.6	20.6-105.8 u/l
Female	119	53.3±16.8	25.3	25.3-106.5 u/l
 4. Positive ratios of diseases as follows:
 Lung Cancer- 76.5%; Gastric Cancer- 64.9%; Hepatic Cancer- 68.4%; Pancreatic Cancer- 82.3%; Colon Cancer- 61.9%; Rectum Cancer- 56.2%; Esophageal Cancer- 70.5%; Mastocarcinoma- 31.2%; Prostatic Cancer- 60%; Hepatocirrhosis- 83.7%; Hepatitis- 58.8%. High values were exhibited, especially in the case of acute hepatitis. All early pregnancy cases exhibited values which were below 'the cut-off values' and all late pregnancy cases exhibited 'positive' results.