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CLINICAL EVALUATION OF SERUM TISSUE POLYPEPTIDE ANTIGEN (TPA) CONCENTRATIONS IN PATIENTS WITH MALIGNANCY OF THE DIGESTIVE SYSTEM H.Sakahara, K.Endo, K.Nakajima, T.Nakashima, H.Ohta and K.Torizuka. Kyoto University School of Medicine. Kyoto.

In order to evaluate tissue polypeptide antigen (TPA) as a tumor marker, serum TPA concentrations were measured using RIA system in 315 patients with various diseases of the digestive system.

Serum TPA values obtained from 83 normal subjects were 52.3 ± 24.4 U/L (mean + standard deviation) and cut off level was set at 100 U/L. Serum TPA was positive in 53% (21/40) for gastric cancer, 53% (16/30) for colorectal cancer, 64% (7/11) for esophageal cancer, 88% (38/43) for hepatocellular carcinoma, 80% (4/5) for gallbladder cancer, 67% (4/6) for bile duct cancer and 83% (35/42) for pancreatic cancer, respectively. In patients with some benign diseases such as gastric ulcer, acute hepatitis and liver cirrhosis, serum TPA concentrations were elevated. Preoperative serum TPA levels were closely related to the stage of the disease based on operative findings in gastric and colorectal cancers and serum TPA concentrations declined markedly after surgical treatment in 11 out of 13 patients with pancreatic cancer. There was no correlation between serum TPA and CEA values.

In conclusion, serum TPA determination by using RIA would be useful in patients with malignancy of the digestive system.

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CLINICAL EVALUATION OF RADIOIMMUNOASSAY FOR TISSUE POLYPEPTIDE ANTIGEN. A.Nishikawa, Y.Taruoka, M.Suehiro, J.Ishimura, M.Fukuchi and K.Nagai. Division of Nuclear Medicine, RI Center, Hyogo College of Medicine. Nishinomiya.

It is well known that Tissue Polypeptide Antigen (TPA) is a tumor associated antigen present in a wide variety of malignant tumors, independent of their origin or type and also placenta and fetus.

We have measured serum TPA concentration in normal subjects (n=54), patients with malignant diseases (n=135), patients with benign diseases (n=95) and pregnant women (n=8) for clinical evaluation of radioimmunoassay for TPA.

The serum TPA concentration in normal subjects was 104 ± 36 U/L and similar results was obtained in patients with various benign diseases. However, the TPA concentration in patients with diabetes mellitus and those with renal failure shows higher than those of normal subjects as follows; 179 ± 83 U/L and 198 ± 68 U/L. The values of patients with malignant diseases was observed significant higher than those of normal subjects. In addition, the TPA concentration of pregnant women was also higher such as 371 ± 341 U/L.

The data obtained in this series suggests that quantitative serum TPA determinations are valuable in management of patients with suspected or diagnosed cancer to confirm the diagnosis, to make prognosis and to detect recurrence. But, serum TPA determinations are not intended for screening purposes.

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RADIOIMMUNOASSAY OF TISSUE POLYPEPTIDE ANTIGEN (TPA). FUNDAMENTAL AND CLINICAL STUDY ON TPA RIA KIT. T.Kokubo, Y.Kuwashima, M.Iio, Y.Miyachi. University of Tokyo. Tokyo. Shizuoka General Hospital. Shizuoka.

Tissue polypeptide antigen (TPA) is regarded as a tumor marker indicating proliferation as well as existence of the malignant neoplasms. We had the opportunity to evaluate TPA RIA KIT used double antibody method fundamentally and clinically. About the basic examinations, the measurable range of serum TPA value was 30-3000 u/l. Dilution test and recovery test showed satisfactory result. Intra-assay variance was 6.3% and interassay variance was 12.0%. Clinically, the mean value of serum TPA of normal subjects (19 males and 15 females) was 74.9 ± 41.4 u/l, and no difference was found between male and female. In 63 cases of malignant neoplasms, the serum TPA values of 36 cases (57%) were high beyond normal range. Particularly high TPA levels were found in hepatocellular carcinoma, breast cancer and colo-rectal carcinoma. Only 14% of the patients with benign diseases have high serum TPA values beyond normal range. But in the patients with liver cirrhosis, the TPA values were especially high. TPA RIA KIT was proved to be useful in the measurement of serum TPA values. Serum TPA values in patients with malignant neoplasms were significantly higher than those in normal persons.

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EVALUATION OF MEASURING SERUM TISSUE POLYPEPTIDE ANTIGEN BY RIA AND ITS CLINICAL USEFULNESS. D.Tsujino, Y.Sasaki, R.Kaneko, C.Tobari, h.Kurosawa, K.Kozakai, N.Sue, Y.Maruyama, M.Hoshino, M.Noguchi, K.Someya, Toho University and St.Marianna University, Tokyo and Kawasaki, Japan.

Serum concentrations of tissue polypeptide antigen (TPA) were measured using RIA kits provided through Santec Inc.-Diichi RI research institute. The characteristics of the kit and clinical usefulness were evaluated.

Intra- and interassay variations assessed with 4 control sera ranged from 2.8 to 13.7% and from 3.1 to 10.3% in C.V., respectively. The mean recovery of added TPA was 115.2%. Linear correlation was observed in dilution tests. No significant cross reaction was observed with CEA, AFP, β 2-microglobulin and PAP.

Serum TPA levels in 24 healthy volunteers were 54.3 ± 24.0 u/l ($\bar{m} \pm 1$ S.D.). In patients TPA over 100 u/l was regarded as positive. Serum TPA concentrations were measured in 241 patients with various cancers and in 122 patients with benign diseases. Positive ratio of TPA in cancer patients was 57% in average including hepatoma (86%), biliary tract ca (75), lung ca (67), pancreas ca (58), colorectum ca (58) and gastric ca (46%). False positive ratio in benign diseases was 34% with the highest ratio in liver diseases (76%). Clinical usefulness of TPA when combined with CEA and ferritin was discussed.