CLINICAL EVALUATION OF SERUM TISSUE POLYPEPTIDE ANTIGEN (TPA) CONCENTRATIONS IN PATIENTS WITH MALIGNANCY OF THE DIGESTIVE SYSTEM

In order to evaluate tissue polypeptide antigen (TPA) as a tumor marker, serum TPA concentrations were measured using RIA systems in 475 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% (3/343) for hepatocellular carcinoma, 80% (4/5) for gall-bladder 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 degree of the bile duct obstruction in patients with cholangiocarcinoma. Serum TPA concentrations declined markedly after surgical treatment in all 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.


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 30-30000 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 hepatic, pancreatic and colorectal 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 value in patients with malignant neoplasms were significantly higher than those in normal persons.