Radioimmunoassay of Serum α-Fetoprotein in Various Liver Disease

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α-fetoprotein (A.F.P.) is a unique fetal α-1 globulin in the serums of most patients with caricinoma of the liver and has been shown to be diagnostic of this malignancy in the adult.

Using radioimmunoassay method, we have detected A.F.P. in serum from twenty-six patients with primary liver cancer. (comformed by biopsy or necropsy), eight patients with metastatic liver cancer, other various liver disease and pregnancy woman.

Result

A.F.P. values of controls is 0–10 ng/ml, in acute hepatitis the valves is below 40 ng/ml except two cases, one of the two is subacute hepatitis. In three cases of twenty-five chronic active hepatitis, the values is over 40 ng/ml. In cirrhosis of the liver, the valves is almost below 40 ng/ml, in only three cases is over 100 ng/ml.

In eleven cases of primary hepatoma the values is over 10000 ng/ml, seven cases is 1000–10000 ng/ml, five cases is below 40 ng/ml.

In metastatic liver cancer, the values is all below 500 ng/ml and two cases is 0–40 ng/ml.

In pregnancy woman the values is 0–500 ng/ml.

In only primary hepatoma, the values of A.F.P. is over 1000 ng/ml. In other liver disease and pregnancy woman is below 500 ng/ml.

The Clinical Application of Radioimmunoassay of α-Fetoprotein

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α-Fetoprtein has been measured by radioimmunoassay method in our institute and it was proved to be able to mesure accurately in the range of 10 ng/ml to 1,000 ng/ml by dilution tests and reappearance tests.

As the levels of α-Fetorotecis of 73 healthy adults were below 15 ng/ml in all, the vales above 15 ng/ml were considered as positive.

Hepatoma: All of the sera of 15 hepatoma patients with the positive Ouchterlony test showed above 1,000 ng/ml and among the Ouchterlony negative group 6 out of 12 were positive (45—660 ng/ml) by radioimmunoassay method.

Cholangioma: All of 3 were negative.

Gastric cancer: 14 out of 65 were positive (23—above 1,000 ng/ml).

Embryonal cell carcinoma: All of 5 were positive (30—above 1,000 ng/ml).

Acute hepatitis: 5 out of 10 were positive (31—920 ng/ml).

Chronic hepatitis: 4 out of 19 were positive (17—95 ng/ml).

Liver-cirvhosis: 7 out of 20 were positive (30—175 ng/ml).

Infants under 5 months old were positive (maximum 170 ng/ml).

Pregnant womens 25 out of 34 were positive (maximum 600 ng/ml) and the highest valnes were at 8 months of pregnancy.

α-Fetoprotion levels of hepatoma might not be inflenced by the size of tumors, but by histology.

We have been followed up two cases with α-