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EVALUATION ON SERUM AFP DETERMINATION BY SOLID PHASE RADIOIMMUNOASSAY. Y. Yonahara, A. Ishibashi, J. Satoh, Y. Sasaki, Y. Takahara, S. Yamashita and M. Kondoh. The 2nd Tokyo National Hospital. Tokyo

We have measured serum AFP levels using a newly established AFP RIA KIT III (Dainabot) and SPAC α -feto KIT (Daiichi) with the solid-phase assay method to evaluate its clinical application.

Indicated combination of 1st and 2nd incubation at 2--20 hours and 4--20 hours gave the best results each other. The most precise condition for the assay was obtained at 25°C.

The intraassay--and interassay--reproducibility, recovery test and dilution test proved to be satisfactory. An excellent correlation ($r=0.984$) was obtained between solid phase RIA values and double antibody RIA values.

In the normal subjects, mean serum levels 1.61 ± 1.31 (0.19--9.40) ng/ml in SPAC α -feto KIT and 1.52 ± 0.76 (0.44--4.08) ng/ml in AFP RIA KIT III. In the AFP RIA KIT III it was indicated low value than SPAC α -feto KIT, though there was not too much difference between these two methods.

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FOUNDAMENTAL EVALUATION ON THE DETERMINATION OF SERUM α -FETOPROTEIN BY A SOLID PHASE RIA. I. Taguchi, E. Mizuno, H. Usuki, H. Yamamoto, A. Yamagishi, M. Hayashi, K. Soeda, T. Sengan and Y. Inoue RI Center, Mitsui Memorial Hospital. Tokyo

It has been ten years since α -Fetoprotein (AFP), one of fetal serum proteins, was first measured by highly sensitive Radioimmunoassay (RIA). Several kinds of AFP RIA kits are commercially available, whose separation for free (F) and bound (B) AFP are by the double antibody method or the PEG method. The solid phase RIA (Sandwich method) using anti-AFP antibody coated beads has recently been developed by Dainabot Radioisotope Lab, Ltd.

This is very useful for screening, since this method has the advantages of the wide measurable range upto 3500 ng/ml, the B/F separation without centrifugation and the small amount of specimen as 20 μ l. Determination of serum AFP was performed and the following results were obtained.

- 1) Precision: The coefficients of intraassay variation for 4 sera were less than 7% ($n=10$).
- 2) Dilution: Dilution curves for 3 sera gave linear equation through the origin.
- 3) Recovery: Recovery rate for 3 sera ranged from 99.8% to 105.5%.
- 4) Correlation: Correlation coefficient with the double antibody RIA kit (Dainabot) was 0.99.

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BASIC AND CLINICAL STUDIES ON THE SOLID PHASE α -FETOPROTEIN RIA. H. Ito, A. Iio, M. Ata, H. Mogami, T. Fujii, K. Yagi, S. Inastuki and K. Hamamoto Department of Radiology, Ehime University School of Medicine.

AFP (α -fetoprotein) value is useful for the detection and the diagnosis of the liver disease, especially hepatoma.

Recently developed AFP RIA KIT based on the solid phase method, which used plastic beads coated with I-125-labeled AFP antibody, was studied for its usefulness.

Basic studies on this KIT for its reproducibility, recovery, dilution test, and relation to the another KIT, were performed. Influences of the several conditions of incubation time and temperature on the standard curve were investigated also. These results showed this RIA KIT satisfactory.

The normal range of AFP by this method was established under 3 ng/ml. The AFP values in patients with hepatitis and liver cirrhosis ranged 3 to 220 ng/ml. There were many overlapped cases between these groups and normal group. In our series, the AFP values over 400 ng/ml suggested strongly the existence of hepatoma.

In follow-up study of patients with hepatoma, steeply and extremely elevated AFP values in a few months predicted unfortunate results.

We concluded that the most promising applications of AFP assay were in the complementary method of detection of the disease and in monitoring the effect of treatment.

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PLASMA PAP, T, E_2 AND PRL LEVELS IN PATIENTS WITH PROSTATIC CANCER BEFORE AND DURING HORMONAL TREATMENT. K. Katayose, Y. Higuchi Department of Urology, Department of Radiology, Fukushima Medical College.

For the determination of Testosterone (T), Estradiol (E_2) and Prolactin (PRL), RIA Kits were used. Prostatic acid phosphatase (PAP) was determined by "Three Day Assay" using EIKEN RIA Kit which has higher sensitivity than "Two Day Assay" at low concentrations. The results are as follows: 1) The PAP level was found to be above 3.0 ng/ml in prostatic cancer patients (Stage B-D) and below 2.0 ng/ml usually found in normal males, most cases of benign prostatic hyperplasia and other urinary tract diseases. Therefore, PAP level above 3.0 ng/ml may indicate a suspicion of prostatic cancer, while PAP level found between 2-3 ng/ml suggests that further investigation should be continued. 2) The decrease of PAP level occurred in the patients who responded well to the treatment. The PAP measurement is thought to be valuable for evaluating the therapeutic effects of prostatic cancer. 3) No significant differences in T, E_2 and PRL levels were found between the non-cancer patients and the prostatic cancer patients before treatment. 4) Treatment of prostatic cancer patients with Estrogen after orchidectomy resulted in a significant decrease of T and E_2 , and increased PRL levels.