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STUDY ON THE RADIOIMMUNOASSAY OF HUMAN GROWTH HORMONE USING DRIED BLOOD SPOT. K. Inoue, R. Togane, K. Nakamura, S. Takeda, and M. Irie. The First Department of Internal Medicine, Toho University, School of Medicine, Ohmori, Tokyo.

In order to determine HGH values using dried blood spot, the blood spot was punched out into 10 mm discs. The radioimmunoassay was carried out by two antibody method after preincubation with buffer at 4°C for 24 hours. Assayable sensitivity of one disc was 13 ng/ml of serum HGH levels. A significant correlation was found between the values of serum HGH and disc HGH (n= 40 r= 0.997). Interassay and intraassay variability were satisfactory. We found that 1) there was a significant correlation between the HGH levels and the numbers of discs used; 2) the trial to increase the sensitivity of assay by decreasing the amount of labeled HGH and antibody was not successful; 3) delayed addition of labeled HGH did not increase the sensitivity.

Using our method, it is possible to detect the patients with hypersecretion as well as hyposecretion of HGH.

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SERUM PREGNANCY SPECIFIC B_1 GLYCOPROTEIN (SP_1) LEVELS IN PATIENTS WITH MALIGNANCIES DETERMINED BY RADIOIMMUNOASSAY. H.Ito, Y.Takagi, A.Kubo, S.Hashimoto. Keio University School of Medicine. Tokyo.

Serum SP_1 levels were previously determined by Ouchterlony method or counter immunoelectrophoresis. This study was done by radioimmunoassay(kindly supplied by Hoechst). Each samples were measured as the percentage bound of zero standard counts. Standard curve was straight between 7-130ng/ml. The least detectable doses of SP_1 was taken as the SP_1 concentration 2SD less than the percent bound at zero SP_1 concentration(30 tubes). The sensitivity of the assay was 5ng/ml for a 0.1 ml serum sample. The intraassay variation was 4.2% at 43ng/ml, but 31% at 246 ng/ml and 42% at 5.2ng/ml(8 assays). The interassay variation was 10% of a SP_1 level of 46ng/ml, 26% at 215ng/ml and 71% at 8.9 ng/ml(4 assays). In 202 sera from patients with malignancies, 3.5% of patients had serum SP_1 level over 5ng/ml, and 1% had over 10ng/ml. Zero of 21 breast cancer, 1 of 41 rectal cancer(2.4%), 1 of 7 esophagial cancer(11%), 0 of 7 gastric cancer, 2 of 82 cervical cancer(2.4 %), 2 of 8 endometrial cancer (14%) had elevated levels of serum SP_1 above 5 ng/ml. Two patients who had serum SP_1 levels above 10ng/ml had either cervical cancer or endometrial cancer.

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DETERMINATION OF SERUM PREALBUMIN BY RADIOIMMUNOASSAY. M.Ishida,Y.Kajita,N.Shiozu, T.Miyazaki,M.Yoshimura,T.Hachiya,H.Ijichi and Y.Ochi. Nantan General Hospital, Kyoto Prefectural University of Medicine, Shiga University of Medical Science. Yagi, Kyoto and Otsu.

It is well known that prealbumin(PA) carries thyroid hormone and is closely linked to retinol-binding protein, but serum PA levels is not well known in various clinical states. We developed determination of serum PA by radioimmunoassay(RIA). Serum PA levels in normal males was 29.4 ± 2.6mg/dl (mean ± SD, n=14), in normal females was 24.9 ± 2.6mg/dl (n=17), and in pregnant women was 18.0 ± 2.5mg/dl. Serum PA levels in liver cirrhosis and icteric stage of acute hepatitis was low and was normalized in convalescent stage of acute hepatitis. Nephrotic syndrome showed high serum levels and hemodialysis patients were in normal range. Hyperthyroidism showed low serum levels as compared with hypothyroidism. The means of serum PA levels in cancer patients were low without any relation to origin of cancer. Stomach cancer was 16.8 ± 6.8mg/dl (n=40), large bowel cancer was 17.3 ± 6.7mg/dl (n=15), lung cancer was 17.2 ± 5.2mg/dl (n=11), primary hepatoma was 14.4 ± 4.4mg/dl (n=6) and others was 16.3 ± 6.9mg/dl (n=12). Serum PA levels and CEA levels showed nagative correlation. Determination of serum PA levels is availabl for detecting prognosis of patients with cancer and also for the index of protein synthesis in liver disease.

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CLINICAL APPLICATION OF CEA DETERMINATION BY THE DOUBLE ANTIBODY METHOD(EIKEN KIT). M.Hamazu,Y.Ochi and S.Hosoda. Dept. of Radiology. and Dept. of Internal Medicine, Shiga Univ. of Medical Science, Otsu.

CEA determination by Eiken-RIA kit was examined. In the RIA 0.1ml of test serum were used directly in the incubation medium, and B/F was separated by the double antibody method. The standard curve was sharp until 27ng/ml. CEA level in normal subject was less than 3ng/ml. When the determined CEA level by the Eiken and Roche kit was compared, Eiken value was about 1/7 of Roche value. The positive correlation between Eiken and Roche value was observed($r=0.887$). In the malignant state the increased CEA level was found in the cancer of lung, esophagus, gastric, pancreas, cholangiom colon, bladder etc, especially in the liver metastasis. However, the increase of CEA level was found in chronic hepatitis, gall stone and heavy smoker of the non-cancerous state. Many different cases between Eiken and Roche value were found. One group(the negative Eiken CEA in spite of the positive Roche CEA) and other group(the positive Eiken CEA in spite of the nagative Roche CEA) were found in the chronic infection and the cancerous state. Although the sensitivity of Eiken kit is not so high, this kit is available for measuring the non-specific tumor marker, because excellent recovery and the easy procedure.