

49

STAT ASSAY OF INSULIN. A.Kuroda, T.Yatabe, T.inaba, H.Murata, K.Chiba and H.Yamada. Tokyo Metropolitan Geriatric Hospital. Tokyo.

Very rapid reporting of results is often required in laboratory of radioimmunoassay. During the surgical operation of a patient with suspected insulinoma, measurement of IRI was requested. Therefore we developed rapid procedure of IRI assay using two antibody method (Eiken RIA kit)

Bound percent was rapidly increased and reached a plateau of about 45 % by four hours at 37 degree C. Bound percent at 30 minutes incubation was about 25 % and was 30 % at one hour. Intra-assay precision, inter-assay bias and recovery ratio showed no significant change between a standard method of 24 hours incubation at 4 C and one hour methods. Estimated IRI concentration showed good correlation of $r=0.9918$ between the standard and one hour method. A method of 30 minutes incubation showed slightly higher concentration at higher dose level ($r=0.9376$). However semiquantitative assessment of IRI can be made with 30 minutes method or even with 15 minutes method. It took about 2 hours from blood drawing to reporting result.

Total examination period could be made shorter even more, if nonseparation method is applied. Because an application of nonseparation method can save more than more than 30 minutes which was required for second incubation and centrifugation.

50

FUNDAMENTAL AND CLINICAL STUDIES OF C-PEPTIDE KIT DAIICHI II. E.Ohtsuka and M.Wakatsuki. Department of Internal Medicine. Yamato City Hospital. Yamato.

It is important to know β -cell function with determined the blood sugar and the serum insulin in the diagnosis and the therapy of the diabetes. The serum insulin has been determined by the method of the radioimmunoassay, but it was not divided the inside and the outside of the insulin. As the proinsulin is resolved to the insulin and C-peptide in the β -cell, the determination of the C-peptide is able to know the secretion ability of the insulin. The fundamental studies were tested in C-peptide kit Daiichi II, and this was compared with C-peptide kit Daiichi I. Both kits had a good correlation. 75g O.G.T.T. were performed on 200 cases. These cases were normal, borderline, mild diabetes, moderate diabetes, severe diabetes and chronic pancreatitis. The blood sugar, insulin and C-peptide in serum were determined at the fasting state, 30 min., 60 min., and 120 min. after loading 75g glucose. The secretion of C-peptide decreased in the cases of severe diabetes. In the cases of the insulin therapy, the insulin level was high, but the C-peptide level was low. These results suggests, this kit is useful at clinical application.

52

CLINICAL EVALUATION OF A THYROXINE-BINDING GLOBULIN AS A MARKER OF LIVER TUMORS. S.Terui, H.Oyamada. National Cancer Center Hospital. Div. of Nuclear Medicine.

This investigation was undertaken to evaluate a high thyroxine-binding globulin (TBG) concentration, in conjunction with the liver scintigram. Studies were performed in 26 patients with primary hepatocellular carcinoma (PHC), 22 post-operative patients with liver metastases, 10 post-operative patients with bone metastases, and 18 follow-up with chronic liver diseases (CLD). The serum was collected just before the injection to obtain the relevant scintigram. TBG was assayed by the manufacturer's protocol. All patients were subjected to thyroid hormones, AFP, and CEA. In our examination, TBG was significantly higher than normal when liver tumors, whatever the primary site of the tumor or its histological findings, were also seen on the scintigram. For PHC, TBG was increased in about 69.2% (18/26) of the patients. Increased level of AFP was noticed in about 92.3% (24/26) of the patients. For the patients with liver metastases, TBG was increased in about 86.4% (19/22) of the patients. Increased level of CEA was noticed in about 54.4% (12/22) of the patients. But all their TBG was higher than normal. The results indicate that elevated TBG with a positive liver scintigram gives a reliable tumor marker to determine liver tumors.

53

FUNDAMENTAL STUDY AND CLINICAL EVALUATION OF RIA-GNOST AFP (TACHISORB) KIT. A.Nagata, H.Kasuya, T.Fomoda, Y.Sakagishi. Radioisotope Laboratory, Department of Biochemistry, Saitama Medical School, Saitama.

Fundamental study; It was better for the assay to take 3-18 hours for the first incubation time and 15-30 minutes for the second incubation time. The incubation temperature was satisfied at broad room temperature. The variance of intraassay and interassay were under 10% (C.V.). High AFP concentration samples either within standard range or over standard range were very well measured by dilution method with dilution serum. The correlation of this method and the second antibody method (Dainabot) was retained on various IgG concentration samples, because Tachisorb is complex of second antibody and protein-A (staphylococcal aureus). But this method was not completely identity of second antibody method by dilution technique with normal saline.

Clinical evaluation; We measured AFP levels in serum in healthy adult and some liver illnesses, and also pregnant women at different stages of pregnancy. The normal range with this kit was under 10 ng/ml.

The ease of preparation with the staphylococcal aureus second antibody reagent, this method may be useful in AFP radioimmunoassay procedure.