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EVALUATION OF TBII ASSAY KIT. S.Bito,A.Yamada,T.Hamasaki,K.Ikekubo,T.Akamizu,T.Ishihara and T.Mori. Dept. of Nucl. Med. and Intern. Med., Kobe Central Municipal Hospital. Kobe.

Thyrotropin Binding Inhibitor (TBI) assay Kit by B.R.Smith was evaluated.

Straight serum could be applicable in this kit, and serum TSH of upto 560μU/ml did not interfere with the binding of I-125 TSH. Comparisons of TBI activities by straight serum and IgG fraction revealed an excellent correlation (n=17,r=0.919).

IgG fraction was prepared by 15% PEG precipitation, and quite a uniform recovery (74.2 ±3.6%) of IgG in the final fraction was confirmed.

Intra- and inter assay variabilities were 1.9 to 3.5% and 15.8%, respectively.

TBI activities in 19 normal subjects were 0.06±3.99%, and 77 of 106 Graves' patients and 2 non goitrous primary myxedema were found positive for TBI. None of Hashimoto, subacute thyroiditis, and nodular goiter including toxic goiter was positive.

Addition to these, dilution curves of potent TBI IgGs did not parallel each other. Interestingly, we found a unique nature of IgG fraction in a patient with Graves' disease, which showed very strong specific binding property against I-125 TSH.

This kit was proved sensitive, reproduceable and convenient, and was considered quite useful for measuring TBI including blocking type antibody, however real meaning of assay results should be clarified after some more investigations.

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BASIC AND CLINICAL EVALUATION OF MESUREMENT OF SERUM FREE THYROXINE CONCENTRATION BY GAMMACOAT ONE STEP $FT_4$ KIT. Y. BAN AND S. IINO. SCHOWA UNIVERSITY, FUJIGAOKA HOSPITAL. YOKOHAMA.

We mesured serum free thyroxine($FT_4$) with the technique of RIA with I-125-$T_4$-BSA conjugation and antibody coated tube.

Coefficient valiation on intraassay of $FT_4$ concentration of 0.22, 1.17 and 1.81 ng/dl showed 15.7, 4.6 and 2.8%, and on interassay of $FT_4$ of 0.16, 1.66 and 6.83ng/dl showed 27.1, 3.9 and 4.5%, respectively. The coefficient of correlation between $FT_4$ value with this method and GammaCoat $FT_4$, Amerlex $FT_4$, $FT_4I$ and $T_4$/TBG were r=0.86, 0.94, 0.95 and 0.89, respectively.

The effect of added hemoglobin of concentration of 0.31-10g/dl don't concluded.

In 44 normal controls, $FT_4$ levels were 1.52±0.26(SD)ng/dl. In 20 untreated Graves' patients and 7 patients with hypothyroidism, $FT_4$ levels were 6.4±3.5 and 0.22±0.25. In 23 chronic thyroiditis, 17 simple goiter, 3 TBG excess and 2 TBG deficiency $FT_4$ levels were 1.57±0.37, 1.55±0.23, 1.6±0.17 and 1.65±0.07ng/dl, respectively. In 2 hypoalbuminemia, $FT_4$ levels were 1.17±0.07. In 3th mo. of pregnant women $FT_4$ levels were 1.68±0.3(12 cases), 4th mo. 1.63±0.35(10), 5th mo. 1.16±0.18(12), 6th mo. 1.05±0.24(10), 7th mo. 0.93±0.16(5), 8th mo. 0.79±0.17(7), 9th mo. 0.89±0.22(13), 10th mo. 0.82±0.15 (14).

These results suggest that this method is very easy, simple and usefull on the mesurement of serum $FT_4$ concentration.

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FUNDAMENTAL AND CLINICAL STUDIES OF THE MEASUREMENT OF DIGOXIN IN SERUM BY SPAC I-125 RADIOIMMUNOASSAY. E.Ohtsuka and E. Fukuda. Department of Internal Medicine. Yamato City Hospital. Yamato.

Various techniques have been employed to estimate the concentration of the digoxin in serum with the methods of the radioimmunoassay. By using solid phase radioimmunoassay, the digoxin concentration was measured.

The fundamental studies were tested in this kit. Also, the clinical application in the various heart diseases were studied on 120 cases during digitalization. These cases contain the patients with the intoxication of digoxin, the patients without the intoxication of it and the patients who were examined every few days during their digitalization.

The mean value in the digoxin concentration is 1.01-0.58ng/ml on 120 cases during digitalization. The value of the digoxin concentration in the cases with the intoxication symptomes was over 3.0ng/ml.

This kit is simple technically and is able to be measured in a short time. So, it is useful as the emergent examination.

These results suggest, this kit is available in clinical application for routine.

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MEASURMENT OF URINARY KALLIKREIN ACTIVITY BY KININ RADIOIMMUNOASSAY. T.Morimoto, N.Takanashi, M.Aoyama. Research division, Special Reference Laboratories Inc. Tokyo.

Kallikrein is usually measured by its esterolytic activity over synthetic substrates or its capacity to generate kinins (kininogenic methods). Because there are esterase in urine, using esterolytic properties are less specific than kininogenic methods.

This report discribed a simple method of measuring urinary kallikrein activity (UKKA) using a sensitive and specific kinin radioimmunoassay(RIA). In our method, urinary endogenous kinins were adsorbed by 2%DCC, following 10μl kinin free urin was incubated with 1μg of purified bovine HMW-kininogen(HMW-kgn) in the presence of kininase inhibitors at 37°C, then generated kinins were measured by kinin RIA. Immunoreactivity of antibody against bradykinin, kallidin and methyonyl-kallidin were 100% respectively and HMW-kgn was $1.5\times10^{-3}$%.

We observed that amounts of kinins generated were proportional to amounts of kinin free urine, when HMW-kgn concentration and incubation time were constant.

A highly significant correlation was found between kallikrein activity measured by RIA and by esterolytic activity.