

315

FOUNDAMENTAL EVALUATION ON THE DETERMINATION OF SERUM FERRITIN LEVELS IN THE HEALTHY PERSON. Y.Takahara, Y.Yamawishi, A.Ishibashi, Y.Sasaki, S.Yamashita, H.Masaki, Y.Yonahara, Y.Ando and H.Ito. The 2nd Tokyo National Hospital and Keio University School of Medicine. Tokyo.

The purpose of this paper was to estimate the normal range and value of the serum ferritin using various radioimmunoassay kits at the Nuclear Medicine Center, the 2nd Tokyo National Hospital.

Serum ferritin levels was examined in 125 healthy cases. When they were classified precisely according to the hematological and biochemical data, 66 cases were normal (46 male and 20 female) and 59 cases were abnormal with hypoferrremia and hypoferrinemia (12 male and 47 female). Serum samples from these cases has been examined by four ferritin assay kits. These radioimmunoassay kit were supplied by four respective laboratories, i.e., D., G., R.P. and R.G..

The results can be summerized as follows  
1) Hypoferritinemia were sometimes seen in cases of healthy men and women without hypoferrremia and others. 2) The serum ferritin levels which were determined at the same time correlated inversely to each other kits, although there were noticeable variations 3) The normal values (ng/ml) were obtained 108, 1±40, 3(D.), 114, 1±52, 9(G.), 121, 5±51, 6(R.P.), 188, 6±60, 2(R.G.) in 46 adult men and 39, 7±16, 3(D.), 37, 5±15, 7(G.), 56, 6±16, 4(R.P.), 94, 8±29, 0(R.G.) in 20 adult women, respectively.

317

CORRELATIONSHIP BETWEEN THREE FERRITIN KITS IN MEASURING NORMAL SUBJECTS. Y.Ando, H.Ito, Y.Takahara, A.Ishibashi, Y.Yamagishi, Y.Sasaki, H.Masaki and Y.Yonahara. Keio University School of Medicine and The 2nd Tokyo National Hospital. Tokyo

In normal 59 males and 64 females, serum ferritin levels were measured using three kinds of ferritin kits ( RIAGNOST, SPAC and RIAPAC ). Observed regression lines were different among males and females. Serum ferritin levels of normal female subjects were lower than that of males. The range of ferritin level of males was so wide that the male correlationship of ferritin level between ferritin kits was lower than that of females. In male subjects correlationship were 0.6-0.65, in female subjects 0.8-0.85 and over all correlationship in men and women was around 0.85. The estimated regression coefficients were  $Y=0.597X+5.6$  in RIAGNOST to RIAPAC,  $Y=0.599X-3.5$  in RIAGNOST to SPAC,  $Y=0.772X+3.6$  in RIAPAC to SPAC, respectively. In normal ferritin range, ferritin levels were mostly proportionate to the ferritin levels by other kits and observed coefficients were thought to be valid, however the coefficients might be not valid in more higher ferritin range, because of the wide variations of ferritin levels.

318

THE CLINICAL SIGNIFICANCE OF URINARY FERRITIN DETERMINATION, THE POSSIBILITY OF PRACTICAL USE FOR THE DIAGNOSIS OF MALIGNANCIES. T.Tanaka, T.Uchida, M.Umino, H.Kimura, T.Yui, S.Matsuda, M.Saito and S.Kariyone. rukuinima Medical College. Fukushima.

Urinary ferritin concentrations were determined by SPAC Ferritin Kit in normal subjects and patients with various hematological disorders and cancers. Using this kit, urinary ferritin could be measured as same as serum ferritin. Urinary ferritin concentrations in normal subjects were below 15 ng/ml. Significantly high values ranged from 100 to 4700 ng/ml were observed in hemolytic patients including PNH, which may be considered to reflect increased ferritin in renal tubular cells due to glomerular filtration of unbound hemoglobin. The same high values were obtained in some cases with leukemia, aplastic anemia, lung cancer and renal failure. The relationship between urinary ferritin values and serum ferritin values were highly correlated in leukemia, malignant lymphoma ( $r=0.772$ ) and cancers ( $r=0.616$ ), excluding a small number of the cases with markedly high urinary ferritin values. In these cases, it is unclear whether urinary ferritin values reflect body iron store or tumor tissue ferritin. In patients with hemolytic anemia, urinary ferritin values appeared to reflect the amount of intravascular hemolysis, and the source of urinary ferritin in malignancy might be investigated in further studies.

320

SERUM FERRITIN LEVEL AS AN INDEX OF TREATMENT OF IRON DEFICIENCY ANEMIA. H.Saito, D.Hayashi, H.Yamada and M.Saito. 1:Dept. of Radiology, Nagoya Univ. School of Med. 2:Radioisotope Laboratory, Nagoya Univ. Hosp. 3:Dept. of Internal Med., Nagoya Univ. School of Med. Nagoya.

The response of iron deficiency anemia (IDA) to iron was observed by testing blood and serum ferritin. Six cases of IDA and 2 cases of non IDA with storage iron deficiency were treated by injecting iron intravenously. On the other hand, 4 cases of non IDA storage iron deficiency were treated by giving 100mg per day of iron orally. In one case of IDA with hemolytic anemia was treated by 8400mg of iron intravenously. In IDA received intravenous iron, serum ferritin was increased and decreased in 2 months, while hemoglobin (Hb) was increased steadily to normal level in 4 months. However, in non IDA storage iron deficiency, serum ferritin level was higher than the level in IDA. The increase of ferritin level was less in non IDA treated orally than the cases treated intravenously, suggesting the dose dependent response of ferritin formation to iron assimilating in the body. In the case with IDA and hemolytic anemia, Hb did not increase above 8g and serum ferritin stayed less than 36ng/ml, although the iron dose was sufficient to fillup storage. Except this case, the serum ferritin level is a good indicator of storage iron level in the course of iron therapy. The reason of poor response in the last case is investigated.