

160.3 ± 69.7 . Acute hepatitis 117.0 ± 63.7 and liver cirrhosis 117.0 ± 53.7 respectively.

Ferrokinetics in acute hepatitis revealed that % RCU was within normal range and PIT values showed marked increase in spite

of high serum iron level.

Meanwhile ferrokinetics in constitutional perbilirubinemia indicated normal % RCV and normal PIT levels.

Evaluation of "⁵⁹Irosorb" a Kit for the Determination of Unsaturated Iron-Binding Capacity of Serum

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A diagnostic kit "⁵⁹Irosorb" for the determination of unsaturated iron-binding capacity of serum has been already on the market in U.S.A. as a useful product. Investigators in our country, however, have doubted the accuracy of the Irosorb method because of unreasonably high values.

Our experiments clarified the following defects of the original procedure of the Irosorb method. First, conditions for incubation of serum with a resin sponge are not so strictly specified, although the efficiency of the resin sponge for absorbing iron is significantly influenced by temperature and time. Secondly, it is not taken into consideration that the absorption of iron is to some extent disturbed by serum.

Furthermore, we improved the procedure to determine unsaturated ironbinding capacity with sufficient accuracy for clinical use. The experimental data are as follows.

The resin sponge absorbed iron citrate ammonium completely within one hour at 37°C. However, when serum is contained in the iron

solution, the velocity of absorption became slow and the complete absorption was not attained within several hours. The suitable time for practical use was one hour at 37°C.

The grade of disturbance by serum can be determined using sera saturated with iron. The absorption rate of the resin sponge using these sera was 85–90% (if adsorption was not disturbed by serum, the rate would be 100%). The reciprocal of the figure is the correcting factor for absorption. The unsaturated iron-binding capacity of given sera is calculated from the formula using the factor.

The improved Irosorb method was compared with the spectrophotometric titration method (Rath-Finch's method modified by us) on the same specimens of serum. The results by both methods were in close agreement.

Using the improved Irosorb method, the average unsaturated iron-binding capacity of normal 10 males and 10 females was 227 and $\mu\text{g/dl}$, respectively, and the percentage saturation was 34.0 and 27.8%, respectively.