

D) Measurement C

(in vitro, Radioimmunoassay)

The studies on automation of the radioimmunoassay using a minicomputer system

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We have reported some results in making the radiommoassay of insulin into automatic procedure using a minicomputer system.

In need of accuracy and simplification of the tests, caused by the increasing number of station and samples, whether disposable plastic tubes could be used in the tests instead of glass ones, was tested.

The method used was Morgan and Lazalow's, i.e. two antibody style, using I-125 labelled insulin.

The results were: when no carrier insulin was added, the precipitation rate for glass tubes was 55.0% on the average, while for plastic ones was

61.2%.

The deviation of the rate for glass tubes was not so much influenced by the added amount of carrier insulin, and comparison of the deviation of the precipitation rate for glass tubes with that for plastic ones, the latter was a little higher and had a disadvantage of easier flowing out of the precipitation from the bottom of tubes.

But the careful handling of the tubes removed the disadvantage and obtained better results. And plastic tubes had also a merit of disposable.

In conclusion, plastic tubes were usable, when secured by handling them carefully.

The automatic diagnosis of renogram by minicomputer system

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As a method of dynamics studies on RI, the integral transformation of renogram curves were carried out in our laboratory by a minicomputer system and the same procedure was on the selected parts of the kidneys obtained by scint camera (i.e. renogram curves of R.O.I.).

The primary report was presented at the meeting of Nippon Societas Radiologica in August, 1972.

The results were:

1. The integral transformation of renogram.

a) In the case of normal functional kidneys, transformed curves consisted of a peaked section "A", followed by a flat section "B", and a down slop which reached to a next flat part "C". "A" is equivalent for segment "a" on the ordinary renogram curves, "B" for segment "b" and "C" for segment "c".