b) Obstructive cases.

"B" and "C" could not be distinguished.

2. R.O.I. renogram after the transofrmations.

a) In a case of normal kidneys.

i) Cortex area curves.

"A" disappeared and "B" reached to "C" faster than normal transformed renogram. The form of "B" and "C" were the same as normal transformed renogram.

ii) Pelvis area curves were convexed form and "A" disappeared.

b) In a case of obstructive cases.

i) Cortex area curves were same with normal R.O.I. renogram curves.

ii) Pelvis area curves were same with obstructive renogram.

These transformed curves were considered to be same with the curves which obtained after the injection of radioisotopes into renal area, and this method, we think, are valuable for the automatic analysis of radiorenogram curves.

Data processing for radioimmunoassay

K. Horio, H. Inoue, H. Kawaguchi and A. Kawakatsu

Shimadzu Seisakusho, Ltd., Kyoto

A. Yoshida

Dainabot Radioisotope Laboratories, Ltd., Tokyo

It is very important to simplify the data processing in radioimmunoassay. For this purpose, we manufactured a new automatic well counting system with a desk top type computer. In this system, we applied a new method for automatic calculation of absolute amount of hormone in radioimmunoassay using a standard curve which is memorized by the computer. Sample number of count and counting time are sent from automatic well counting system to computer and then analyzed taking steps as follows.

(1) The measurement of radioactivity in samples which contain known amount of hormone to make a standard curve. The 1st count and back ground are measured, and memorized by computer, and the back ground counts are subtracted from each counts to obtain net counts in c.p.m. and B (%) values for each sample.

(2) Plot the B (%) values to the amount of hormone by hand.

(3) Determine a most approximate curve for each data point. In this case, we simulated the standard curve between B (%) values and absolute amount of hormone by a hyperbola.

$$y=\frac{c}{x+a}-b$$

Where: y is the amounts of hormone.
x is the B (%) value.
a, b, and c are the constants for the hormone to be measured.

(4) Find a difference between standard curve and approximate curve. If there are difference in in cliniczl view, we can define two separated approximate curves as a standard curve, so we can get more accurate approximate curves.

(5) Finally, the measurement of radioactivity in samples which contain unknown amount of hormone. In this case, sample number, number of count, counting time, c.p.m., B (%) and absolute amount of hormone for each sample are printed out in roll chart. We applied this approximation method to the measurement of Insulin, H.G.H., T.S.H., Au-Ag, and α-fetoprotein and find that the result is very satisfactory.