

The Effect of Dimercaprol (BAL) and O-Penicillamine on the Total-Body Clearance of ^{203}Hg -Salyrgan

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We investigated the effect of some chelating agents on the total-body clearance of ^{203}Hg -Salyrgan. Renal scintiphoto was taken in 39 children suffering from renal diseases. Among these children 27 cases whose renal function had been found to be normal, were divided into three groups as follows:

- (1) Radiosalyrgan was administered without chelating agent (10 cases).
- (2) Radiosalyrgan was administered with 3 mg/Kg of BAL (i. m.) two or three times (10 cases).
- (3) Radiosalyrgan was administered with 600-1200 mg/day of D-Penicillamine (per os) for three days (7 cases).

They were followed up to 4 weeks and were

measured for the total-body retention.

In the first control group 24-hr, 1-week and 4-week total-body retention was $18.6 \pm 8.6\%$, $9.9 \pm 4.6\%$ and $3.8 \pm 1.7\%$, respectively. These results are about a half of the retention of ^{203}Hg -chlormerodrin.

In the second BAL-administered group, it was $12.8 \pm 5.4\%$, $6.0 \pm 3.1\%$ and $4.2 \pm 0.7\%$, respectively.

In the third Penicillamine-administered group, the retention was $12.4 \pm 3.2\%$, $2.8 \pm 0.8\%$ and $2.0 \pm 0.7\%$, respectively.

Though there were no statistical differences in our small series, we can find a tendency to decrease the retention with such chelating agents.

Further investigation will be expected.

The Clinical Use of ^{203}Hg -Salyrgan in Renal Disease

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We examined fundamental and clinical studies of kidney by ^{203}Hg -Salyrgan and the results were as follows.

We know that the chief distributed organ of ^{203}Hg -Salyrgan is the kidney and on the autoradiogram the blackened dots there are predominantly into the distal tubuli.

Disappearance of ^{203}Hg -Salyrgan from blood stream in the normals get to half within 16 min, and in the patients with renal diseases the disappearance to half takes longer. The

rate of prolongation were parallel with severity of illness.

It seemed reasonable that the simultaneous combination of nephrography and scintiphoto-graphy by ^{203}Hg -Salyrgan would supply information about the renal function that could not be obtained from procedure alone.

We think that the method of ^{203}Hg -Salyrgan is a kind of the most useful research technique for evidence of the damage in renal parenchyma with low absorbed dose in tissues.