

in the tumor area. Clearance rate of  $^{131}\text{I}$ -MAA is almost identical in various areas of the lung in a same subject. It was concluded from our study that the scanning of the lungs

after  $^{131}\text{I}$ -MAA infusion into the bronchial artery was not useful in clinical diagnosis and treatment of lung cancer.

## Regional Pulmonary Blood Flow in Tuberculous Patients

R. IZUCHI, H. BABA, K. WATANABE and M. IIO

*National Nakano Sanatorium, Tokyo*

This presentation was reported about the pulmonary scanning with  $^{131}\text{I}$ -MAA as a result of studies in 700 cases. All cases were pulmonary tuberculous patients.

The procedure of dot and photoscanning;  $^{131}\text{I}$ -MAA was injected intravenously.

All injections were made with the patients in the supine or lateral decubitus position. Scans were performed with the Nihon Musen scintillation scanner. The dot and photoscanning were made together in 5 minutes at the supine position after the completion of injection. Dose of 200  $\mu\text{Ci}$  of  $^{131}\text{I}$ -MAA were adequate. The procedure were required about 1 h. with scan speeds of 1.7 cm/sec. and pitch of 2 mm. The collimator was used F.15 cm of F.10 cm. One dot was made 8 counts per 0.1 sec.

The procedure of the blood flow rate to the right and left lung; Scan was run from right to left. The counting rate with time constant 0.3 sec. was proportional to the amount of  $^{131}\text{I}$ -MAA in the each lung slice.

The blood flow rates to the right and left lung were determined with counting rate. The 8 slices of counting rate were made in the lung of each patient.

The posture during the injection of  $^{131}\text{I}$ -MAA; Different posture were used during the injection of  $^{131}\text{I}$ -MAA. The first, position was usually used supine position. The second, in the cases of paradoxical blood flow with usual posture, especially diminished radioactivity on the side of the pathological X-Ray shadow of the lung, position was used lateral decubitus.

The patient was placed in the supine posi-

tion for scanning after injection of  $^{131}\text{I}$ -MAA.

Results; In the case of the pulmonary tuberculous patient, four points should be taken into consideration.

1) The pulmonary blood flow in the involved region was diminished, and the ratio of the blood flow and the  $\text{O}_2$  consumption with bronchspirometry on 50 cases were the same, but a paradoxical value was showed in some cases.

2) In the cases of bronchostenosis and bronchial ulcer were showed diminished blood flow to their side of the lung.

3) In some cases of the diminished blood flow in the involved region, the blood flow and the  $\text{O}_2$  consumption were increased with lateral decubitus position downwards the involved region during injection of  $^{131}\text{I}$ -MAA.

In the routine examination of pulmonary scanning, the lateral decubitus position is useful method for examination of circulatory dynamics in pulmonary tuberculous patients.

4) Comparing the blood flow of the right lung to the left lung in the patients, the diminished blood flow beyond the pathological X-Ray shadow of the lung was showed on the left side more than on the right. It is assumed that the anatomical discrepancy of the position on pulmonary artery and bronchus make a difference to effect on the pulmonary blood flow.

The left pulmonary artery runs through a ring of the bronchus, this ring is made of main bronchus, B.1, B.2, B.3, and B.6. The pathological change is easily effected to decreasing pulmonary blood flow.