Serial Angioscanography of Tumor by Means of Intraarterial Injection of Macro-aggregated Albumin (MAA)

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Summary:

Eighty-four of neoplastic and 21 cases of non-neoplastic disease, that is 105 cases in total, were subjected to study. Percutaneous selective arteriography was performed by means of Seldinger's technique using Oedman's catheter and MAA was injected into the arteries through the catheter. Attempts were made to inject branches of artery that include the vascular bed of the aumor or region of interest. The dose was 100 to 250 μCi for carotid and bronchial arteries, and 500 to 50000 μCi for other arteries. Immediately after the injection the distribution of MAA was ascertained by linear and area scanning. Scanning was repeated daily until the tumor was positively delineated or at least 1 to 2 week if this did not occur. After injection, non-radioactive iodine was given to saturate the thyroid gland.

MAA Test was evaluated as positive (+), if the positive scintigraphy was obtained over the tumor; however, MAA Test as negative (−), if the area of interest was the same as the surrounding background.

In neoplastic disease, 66 of 84 cases were positive (79%) and 16 of 21 cases of non-neoplastic disease were negative (76%). The time to obtain the positive scintigraphy of tumor in 66 positive cases of neoplastic group was as follows: 14 cases immediately after injection (21%), 19 cases in one day (29%), 19 cases in 2 days (29%), 9 cases in 3 days (13.5%) and 5 cases in 4 days (7.5%).

The differential absorption ratio of neoplastic and normal tissues, comparison of counts per gram of each tissue, measured by well-type scintillation counter, was 2 to 30 times higher in neoplastic tissue than normal.

The result of MAA Test suggests that non-neoplastic cases are possible to differentiate from the neoplasm significantly.

Tumor Deposit of ^{131}I-MAA by Arterial Infusion

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Recently, there are several reports concerend with the tumor deposit of ^{131}I-MAA by arterial infusion. In our laboratory, 20 patients bearing with tumors of lung, liver, pancreas, and G.I. Tracts were examined about this ^{131}I-MAA infusion. In our cases, 150-400 μCi of the ^{131}I-MAA were injected into the alimentary canals of the tumors and followed successively by the use of scanner with 2 inch. NaI crystal honey cone and or