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EVALUATION OF EFFECT OF PROSTAGLANDIN E1 (PGE1) CONTINUOUS INTRA-ARTERIAL INJECTION THERAPY (PGE1-CIAIT) ON THE DIABETIC PERIPHERAL DISORDERS USING Tc-99m MICRO-SPHERE ALBUMIN INTRA-ARTERIAL INJECTION METHOD (Tc-MA).

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We already reported that diabetics with gangrene got the result of high shunt rates on Tc-MA and so diabetic gangrene is greatly affected with abnormal continuous opening of arterio-venous anastomoses due to dys-function of sympathetic nerve. As the treat-ment of diabetic gangrene we tried to administrate PGE1 to 7 diabetics with gangrene who did not have obstructive findings of tibial arteries on RI angio-graphy for 30 to 90 days with a continuous arterial injector and evaluate shunt rates and distribution on Tc-MA.Though all patients showed high shunt rates of bi-lateral legs before the treatment of PGE1, on one month after starting PGE1-CIAIT bilateral shunt rates of patients were significantly decreased not only in the injection side but in the opposite side, and the shunt rates were kept decreased on one month after the end of PGE1-CIAIT. Dis-tribution of Tc-MA turned from abnormal to normal pattern.Diabetic gangrene were im-proved after the therapy.This study suggests that PGE1 has effect for diabetic gangrene by improvement of dysfunction of arterio-venous anastomoses.

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DRUG CONCENTRATION INVESTIGATED BY Xe-133 IN THE METHOD OF BALLOON OCCLUDED ARTERIAL INFUSION.

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Balloon occluded arterial infusion is a new method for administration of anticancer drugs, in which the anticancer drugs are in-fused into the artery of cancer affected organ under its temporal occlusion. Inter-ruption of the arterial blood flow is con-sidered to keep the drugs at high concent-ration in the organ, because the drugs is not diluted by blood. To evaluate the drug concentration in this method,we performed a Xe-133 wash out test in the kidney, the liver, and the pelvis. Radioactivity of Xe-133 in the kidneys with arterial occlu-sion was over 16 times in the kidney with-out occlusion, in the liver 5 times and in the pelvis 3 times. Interestingly, radio-activity in tumor area of the liver was 2 times higher than in the non-tumor area.

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RADIATION-INDUCED CHANGES IN REGIONAL BLOOD FLOW IN PRIMARY CERVICAL CARCINOMA.

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We studied clinical evalution of radia-tion-induced changs in the regional blood flow in the primary cervical carcinoma. The blood flow in 5 primary cervical carcinoma was measured with the xenen-133 wash-out method. Xenon-133 (300-500 μCi) was slowly injected into the tumor. The counts were recorded for 5-10 minutes. The counts gave in most cases a two-exponential curve (fast and slow component with half-time of T_1 and T_2).

The blood flow are decreased in all cases after 3-4 days of radiotherapy. The blood flow are increased in 3 cases after 7 days of radiotherapy. The fast component with half-time(T_1) are pro-longed in all cases after 3-4 days, and are shortened in 4 cases after 7 days of radio-therapy. The slow component with halr-time (T_2) are shortend in 3 cases in 3-4 days, and are prolonged in all cases after 7-14 days of radiotherapy. A/B (ratio of scale factors of two-exponential curve) are in-creased in 4 cases in 7-14 days of radio-therapy. There are no difference of histology or staging of cancer.

After 3-4 days of radiotherapy, the blood flow of tumor is decreased due to prolonged T_1 and increased A/B.

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HEMODYNAMIC CHANGE OF LOWER EXTREMITIES BY POSTURAL CHANGE IN PATIENTS WITH ARTIFICIAL PACEMAKERS.

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Hemodynamic changes of lower extremities of patients with artificial pacemakers were studied by the postural change from supine position to standing position.
Subjects and method: Subjects were 10 pati-ents with artificial pacemakers and 8 normal subjects. Cardiac index, blood flow of the femoral artery, the popliteal artery and the deep vein and skin blood flow of the foot were measured in supine position and standing position shortly after stand-ing and compared each other. Cardiac out put was measured with dye dilution method. Blood flow of the femoral artery and the popliteal artery was measured with ultra-sonic pulse doppler system. Blood flow of the deep vein of lower extremities was measured using RI-Venography and skin blood flow of the foot was measured by laser doppler method. Results: Pacemaker case showed a more reduced cardiac index and more decreased blood flow of the deep vein than normal subjects, but, different from normal subjects, did not show a reduction in blood flow of the femoral and popliteal artery. These results might show a reduct-ion of vasoconstriction in peripheral vascular beds of the patients with artificial pacemakers.