

THE TWENTY THREE YEARS EXPERIENCE OF THE RADIONUCLIDE SYNOVECTOMY

Andjelković Z, Spaić R

Rheuma Praxis, Medica Nucleare, Belgrade

Patients with rheumatoid arthritis, hemophilic joint disease, and other inflammatory joint diseases not responding to conventional treatment were selected for radionuclide synovectomy. Since the first radionuclide synovectomy performed in 1982, a total of 677 joints were treated by this method. Colloid suspension of Y-90 was selected for intra-articular injection in large joints (322 patients, 344 knees), Re-186 sulfide colloidal suspension for medium sized joints (84 patients, 96 joints: the hip, shoulder, elbow, wrist and ankle); and Er-169 citrate colloidal for small joints (59 patients, 237 joints: metacarpophalangeal and proximal-interphalangeal joints). The amount of administered activity and clinical effects were estimated in accordance with: the size of the joint (measured by radiography), synovial thickness, the amount of effusion and popliteal cysts (all measured by ultrasound), and activity of inflammation (joint pertechnetate uptake was measured). Average activity was 185 MBq for 2 ml of Y-90, 74 MBq for 0,25 ml of Re-186, and 12 MBq for 0,1 ml of Er-189. Except for the knees, intraarticular application of radioactivity was performed under arthrography. Distribution of radiopharmaceuticals inside the joints was controlled by scintigraphy. The joints were than immobilized for 72 hours. Biodistribution and lost activity were measured in some patients by bremsstrahlung radiation with gamma camera after 24 hours and absorbed doses (in joints, regional lymph nodes and liver) were estimated.

Therapeutic effects were evaluated after three years: total 60%, satisfactory 20%, without effect 20% for all joints. After eight years: total 40%, satisfactory 20%, without effect 40%. The best and long lasting effects were achieved in the large joints, while they were poor in the small ones. The best effects were achieved in joints with radiography grade I, II, and synovial thickness between 0, 27 and 0,39cm. Satisfactory effects were achieved in joints with synovial thickness of up to 0,49 cm independently of radiography grade. The activity of systemic disease had no influence on therapeutic effect in the first three years of follow-up. Radionuclide synovectomy is routine therapy with excellent clinical results and without side effects.