^{90}Y citrate colloid

1. Indications
^{90}Y-Citrate colloid is approved for therapeutically radiation of hypertrophy of the synovial membrane of the knee joints. The indication is mostly used at mono-or oligoarticulair arthritis of chronic inflammatory rheumatism, especially rheumatoid arthritis.

2. Preparation
Approved product, see summary of product characteristics (SmPC).

3. Quality control
Approved product, see summary of product characteristics (SmPC) and the European Pharmacopeia.

4. Interactions
^{90}Y-Citrate colloid should be administered at least 8 days after local application of contrasts, as contrast contain EDTA or other chelators that may remove yttrium from the colloid medium.

5. Contraindications
^{90}Y-Citrate colloid is contra indicated during pregnancy or breastfeeding, in the case of infections of skin diseases around the injection area, in case of bacterial arthritis, in case of ruptured cyst of Baker or hypersensitivity.

6. Adverse reactions
Transient fever in the first 24 h after administration, allergic reactions and tenderness at the injection site have been described. Exacerbation of the inflammation may occur and can be treated with an NSAID.

7. Biodistribution & pharmacokinetics
The product is administered as a single intra-articular dose for radiation synovectomy. The division and distribution of the radio-element from its point of application are studies in the rabbit: After injection of 0,59 MBq yttrium around 87-100% of the injected amount of yttrium is found after 7 days in the joint. The autoradiography showed a uniform distribution throughout the synovial membrane. In experimental arthritis 40 min after intra-articular injection of 0,37 MBq of yttrium an amount of 25% of the administered activity is recovered in the synivial fluid. Any leakage from the joint in the regional lymph nodes, and therefore the like hood of exposure to radiation from the lymphocytes and the liver may depend on the movement of the joint.
Therefore immobilization of the treated joint is recommended for the duration of one physical half-life if yttrium (ca. 3 days). Another study showed that 24 h after intra-articular injection of 3,737 MBq of ^{90}Y Citrate colloid around 0,2% of the activity is found in the

blood and 0,4 and 0,13% respectively in the urine and the feces. ^{90}Y Citrate colloid decays to from stable zirconium for which neither a therapeutic nor toxicity has been reported on the joint.

8. Stability

The product has a shelf-life of 15 days after production. After preparation of the first doses the product has an expiration date of 24 h. The product has to be stored in the fridge (2-8°C) after preparation of the first doses.

9. Literature

- SmPC Yttrium (90Y) colloidsuspensie CIS bio international.
- KNMP kennisbank yttrium Y 90 citraatcolloide.