^{67}Ga citrate

1. Indications

Gallium is approved for:

- Non-specific tumour imaging and/or localizing agent
- Localisation of inflammatory lesions like sarcoidosis

For more information, see corresponding chapter Gallium scintigraphy.

2. Preparation

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

3. Quality control

The drug product complies with the European Pharmacopeia (PhEur) monograph for Gallium (^{67}Ga) citrate injection.

4. Interactions

Iron-containing medication

Iron has the same binding place (transferrin) as gallium. Biodistribution of gallium can be disturbed, with uptake in normal lymph nodes. Elimination of unbound gallium is more rapid. Check iron level in blood before scintigraphy.

Cytostatics

Methotrexate, cisplatin and vincristine can cause an increase of iron level and consequently a change in biodistribution. Perform the scan two weeks after treatment with chemotherapy.

Cortisone

Cortisone preparations suppress ^{67}Ga-citrate uptake in cerebral tumours. This is thought to result from a decrease in extracellular sodium and fluid volume. Uptake of tracer into the tumour may be decreased.

Drugs that cause hyperprolactinemia

Drugs like fenothiazines, metoclopramide, methyldopa increase levels of prolactin. ^{67}Ga citrate uptake in breast tissue can be increased.

5. Contraindications

- Hypersensitivity to the active substance or to any of the excipients
- The product contains benzyl alcohol. This excipient is contraindicated in infants or young children under 3 years old.

6. Adverse reactions

Intravenous administration of ^{67}Ga citrate has been reported to provoke adverse reactions

of an anaphylactoid nature (estimated incidence of 1-5 per 100.000 administrations). The symptoms are generally mild being characterized as a warm sensation, generalized flushing, cutaneous erythema, pruritis and/or urticaria.

7. Biodistribution & pharmacokinetics

After intravenous administration , Gallium is bound to transferrin in plasma. It is nonspecific in biodistribution and at 48-72 h it is seen in the liver (5%), kidneys (2%) and bone and bone marrow (25%).

During the first 24 h after administration 15 to 25% of the administered dose is excreted via the kidneys. The remaining activity is slowly excreted via the intestinal tract ($t_{½}$ of 25 days). By day 7 post injection, the body usually retains about 65% of the administered dose.

8. Literature

- SmPC Gallium Ga67) Citrate Injection, nov 2004.
- Schreuder N. Radiofarmaca medicatiebewaking. Eerste complete overzicht van interacties en contra-indicaties bij radiofarmaca. 2013.
- Santos-Oliveira et al. Radiopharmaceutical drug interactions: a critical review. An Acad Bras Cienc. 2008;4:65-675.