^{111}In Pentetreotide

Octreoscan®, DTPAOC,
[In-111-DTPA]-octreotide

1. Indications

^{111}In pentetreotide specifically binds to receptors for somatostatin.
^{111}In pentetreotide is indicated for use as adjunct in the diagnosis and management of somatostatin receptor bearing gastro-entero-pancreatic neuroendocrine (GEP) tumours and carcinoid tumours, by aiding in their localisation. Tumours which do not bear receptors will not be visualised.
In a number of patients suffering from GEP or carcinoid tumours the receptor density is insufficient to allow visualisation with ^{111}In pentetreotide.

2. Preparation

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

3. Quality control

Approved product, see summary of product characteristics (SmPC)

4. Interactions

Somatostatin analogues (lanreotide, octreotide, pasireotide)
Short-acting somatostatin analogues should be discontinued 24h before the injection of ^{111}In pentetreotide.
Long-acting somatostatin analogues should be discontinued depending upon the dosage form. Switching to short-acting somatostatin analogues is a good option. An alternative is to plan the injection of ^{111}In pentetreotide just before the next administration of the long-acting somatostatin analogue. However, potentially there are still somatostatin levels present which can interfere with the scintigraphy.

Total Parenteral Nutrition (TPN)
^{111}In pentetreotide should not be injected into intravenous lines for, or together with solutions for total parenteral nutrition. A complex of glycosyl octreotide conjugate may form.

5. Adverse reactions

Adverse reactions attributable to the administration of ^{111}In pentetreotide are uncommon (<1/100): Asthenia, dizziness, headache, fever, flush, hypotension, changes in liver enzymes, joint pain, nausea, sweating.
These adverse events are not specific and suggestive of vasovagal reactions or of anaphylactoid drug effects.

6. Biodistribution & pharmacokinetics

Within an hour of injection, most of the dose of ^{111}In pentetreotide distributes from plasma to extravascular body tissues and concentrates in tumours containing a high

density of somatostatin receptors.
Within 24 h after intravenous administration, approximately 80% of the radiolabelled pentetreotide is eliminated through the urinary system. After 48 h 90% is excreted. ^{111}In pentetreotide is taken up by the following organs: liver (approx 2% at 24 h) and spleen (approx 2,5% at 24 h). Uptake in thyroid and pituitary occurs but not reproducibly. The uptake in kidneys is partly a reflection of ongoing elimination through the urine and partly due to delayed excretion by the kidney. The elimination via the gallbladder and subsequently the faeces is approx 2% of the administered activity in patients with normal intestinal function.
Up to 6 h post-administration radioactivity in urine is predominantly intact ^{111}In pentetreotide. Thereafter, increasing amounts of non-peptide-bound activity are excreted.

7. Stability

The injection vials included in the kit having a shelf life of 24 h after the activity reference time of ^{111}In. After reconstitution: 6 h.

8. Literature

- SmPC Indium [In111] Octreoscan Injection, solution for injection 37 MBq/ml.
- Schreuder N. Radiofarmaca medicatiebewaking; eerst complete overzicht van interacties en contra-indicaties bij radiofarmaca 2013.
- Balon HR et al. The SNM Practice Guideline for Somatostatin Receptor Scintigraphy 2.0. J OF Nuc Med Technology, 2011;39(4).