

^{99m}Tc succimer

^{99m}Tc Technetium succimer (DMSA®)

1. Indications

^{99m}Tc-Succimer injection kit is approved for imaging of the kidney, for morphological analysis of the renal cortex, abnormal kidney function and place determination of ectopic kidney.

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

Ammonium chloride (antitussive): may substantially reduce renal uptake and increase hepatic uptake of ^{99m}Tc succimer by changing acid-base balance.

Sodium bicarbonate: reduction of renal uptake of technetium ^{99m}Tc succimer by alkalinisation of urine.

Mannitol: reduction of renal uptake of technetium ^{99m}Tc succimer because of dehydration.

ACE inhibitors

ACE inhibitors decrease uptake in the affected kidney in patients with unilateral renal artery stenosis. This is generally reversible after discontinuation of treatment with any of the above chemical products should be interrupted where possible. Care should be taken to ensure the patient is adequately hydrated before scanning.

5. Adverse reactions

The reported reactions were mild to moderate, but the incidence of severe reactions cannot be ruled out.

Vasovagal reactions are probably caused by the procedure itself, especially in anxious patients, but a contribution of the drug cannot be excluded.

Local reactions can include skin rashes, inflammation, swelling and edema. The likely cause of these reactions is extravasation. Detailed extravasation may necessitate surgical intervention.

6. Biodistribution & pharmacokinetics

After intravenous administration of ^{99m}Tc succimer extends its elimination from the blood in patients with normal renal function in three phases. The effective half-life of ^{99m}Tc-succimer in the blood is approx 1 h. ^{99m}Tc succimer is found in high concentrations in the

renal cortex. A maximum quantity is generally observed within 3-6 h after intravenous injection, with approx 40-50% of the dose retained in the kidneys. Less than 3% of the administered dose is recovered in the liver. This amount can significantly increase and the distribution may decrease in the kidneys in patients with an impairment in kidney function.

7. Stability

The shelf-life of the product is 4 h after reconstitution. After reconstitution the product has to be stores below 25°C, not in the fridge or in the freezer.

8. Literature

- SmPC Tc-99m-succimer DMSA.