ASUGI
Azienda Sanitaria Universitaria Giuliano Isontina

REGIONE AUTONOMA FRIULI VENEZIA GIULIA

FACTSHEET

MAMMOSCINTIGRAPHY

Azienda Sanitaria Universitaria Giuliano Isontina

Technical name: breast scintigraphy with positive indicators 92.19.4

Principle

Mammoscintigraphy is a non-invasive diagnostic procedure capable of providing planar and tomographic images with informative content on the cellular viability and cellularity of breast lesions. A number of different radiopharmaceuticals were used to carry out this investigation. The most widely used tracer is ^{99m}Tc-Sesta-MIBI, a lipophilic cation, registered for this purpose in several countries, as well as other radiopharmaceuticals such as ^{99m}Tc-Tetrofosmin.

^{99m}Tc-Sesta-MIBI is a small cationic complex of technetium which accumulates in myocardiocytes and in some neoplastic cells. Its accumulation mechanism in cells, like that of other lipophilic cations, is known; it is an indicator of the transmembrane electric potential which is concentrated mainly at the level of the mitochondria. Its accumulation is proportional to the intensity of the dependent energy metabolism and therefore of cell proliferation. Recent publications show that its accumulation has decreased in lesions demonstrating multi-drug resistance.

Clinical indications

Although MRI is today the main 2nd-level imaging technique for the study of breast cancer, scintimammography plays a role in the following cases:

- Breast cancer diagnosis when mammography is questionable, inadequate, or indeterminate. In particular, it plays a complementary role in patients with dubious microcalcifications, parenchyma distortions, presence of surgical scars (after surgery or biopsy), radiologically dense breast tissue, breast implants.
- Diagnostic completion in the identification of multicentre, multifocal or bilateral tumours in patients with known breast cancer.
- Multi-drug resistance study.
- Evaluation of tumour response to adjuvant chemotherapy.

Technical Indications (Precautions)

- Pregnancy
- Breastfeeding (if possible, breastfeeding must be suspended for at least 24 hours after administration of the radiopharmaceuticals) Although some protocols verify the patient's menstrual cycle period, no influences of this factor have ever been reported in the test result.
- Clinical evaluation by the nuclear radiologist
  The nuclear radiologist must perform a thorough clinical examination of the breast and locoregional lymph nodes.
  Furthermore, s/he must collect all the clinical information useful for the interpretation of the images
  Previous mammogram performed no more than 4 weeks before (mandatory);
  Previous breast ultrasound performed no more than 4 weeks before (optional);
  Other diagnostic investigations available: MRI
  The following information must be carefully collected:
  Recent surgery or invasive diagnostic procedures: fine needle aspiration (check that at least 2 weeks have elapsed), excisional biopsy (check that at least 4-6 weeks have elapsed), surgery or radiotherapy (check that at least 2 months have passed).
  Recent chemotherapy

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