NEN PRECEPTORSHIP
LA PRATICA CLINICA NELLE NEOPLASIE NEUROENDOCRINE

5/6 Aprile 2018 | IEO, Istituto Europeo di Oncologia - Milano

NEN Preceptorship

IEO
Istituto Europeo di Oncologia

“L’imaging funzionale”

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Terapia Medico-Nucleare ed Endocrinologia

Fondazione IRCCS
Istituto Nazionale
dei Tumori

Imaging funzionale

Radioisotopo

Emettitore di fotone singolo → SPECT

Emettitore di positroni → PET

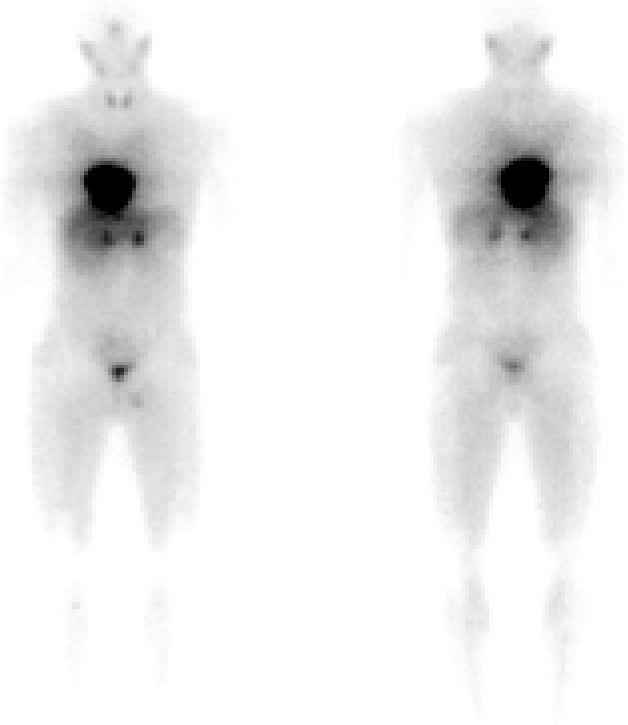
Farmaco

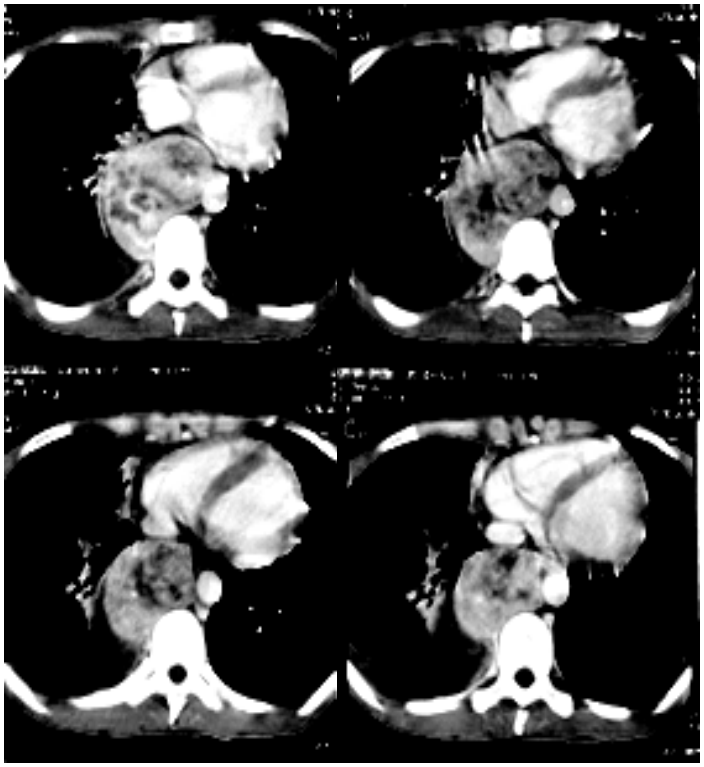
Analoghi della somatostatina

Peptidi

Aminoacidi

^{123}I-mIBG (meta-iodobenzilguanidina)



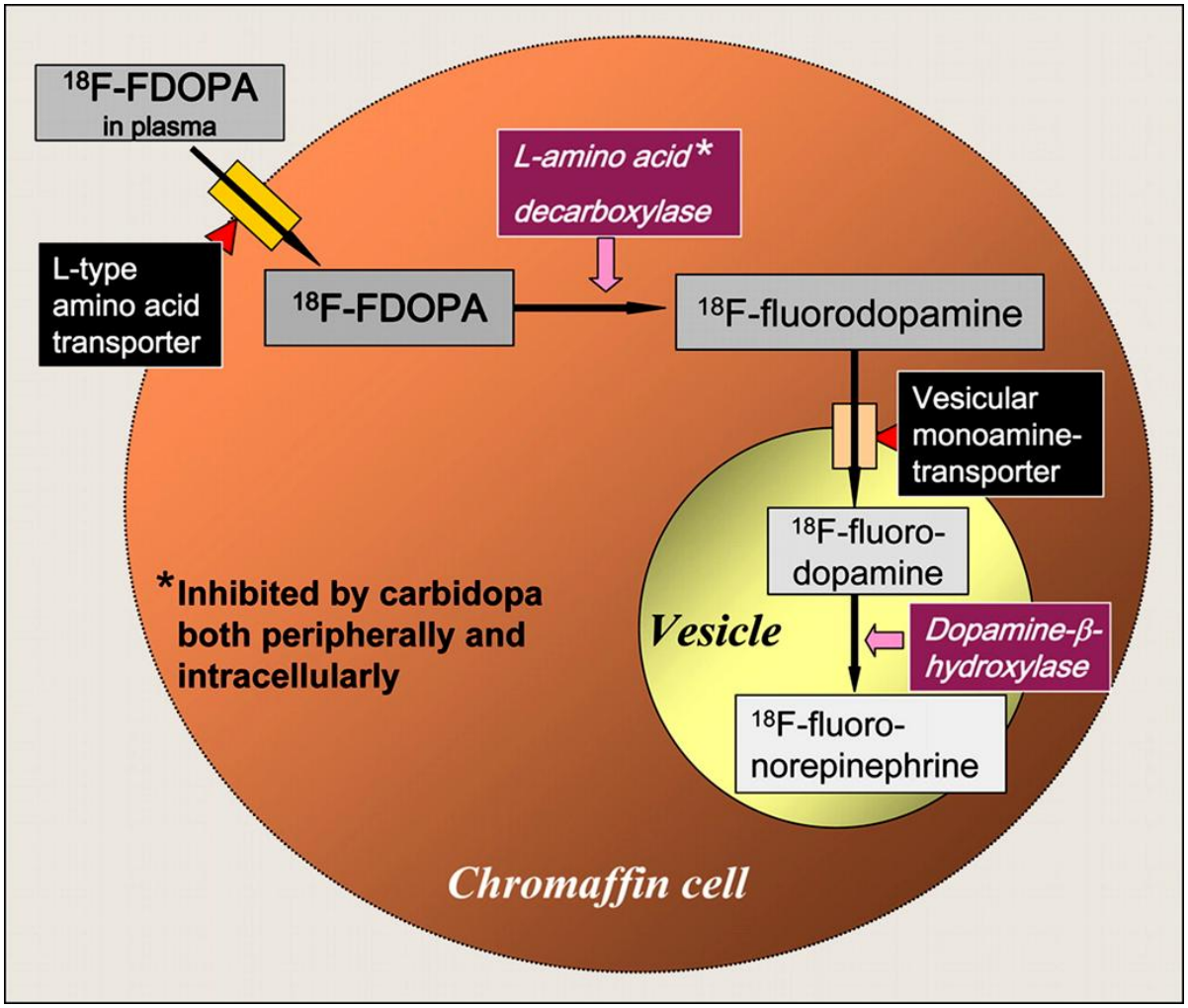


^{123}I-mIBG

TC torace

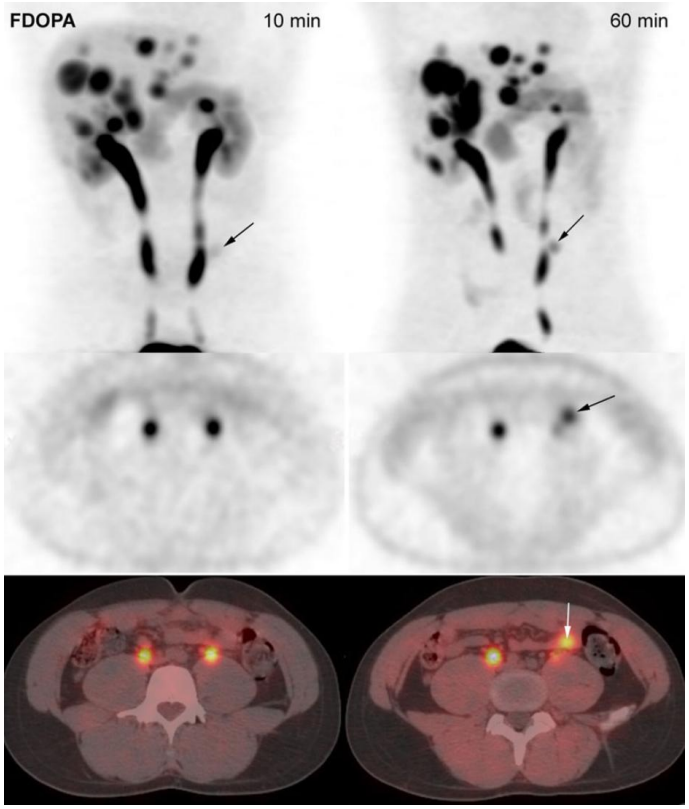
Paziente portatore di esteso paraganglioma mediastinico

^{18}F-FDOPA



Minn H, J Nucl Med 2009

^{18}F-FDOPA PET/CT imaging



Santhanam P, Clinical Endocrinol 2014

Indicazioni

PGLs/PHEOs

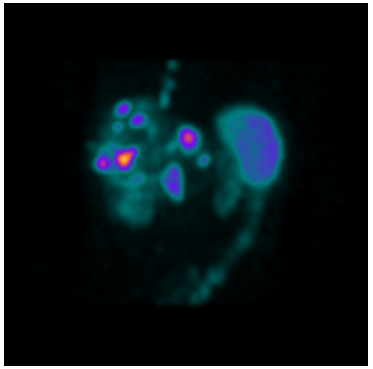
Iperinsulinismo congenito (forme focali)

MTC

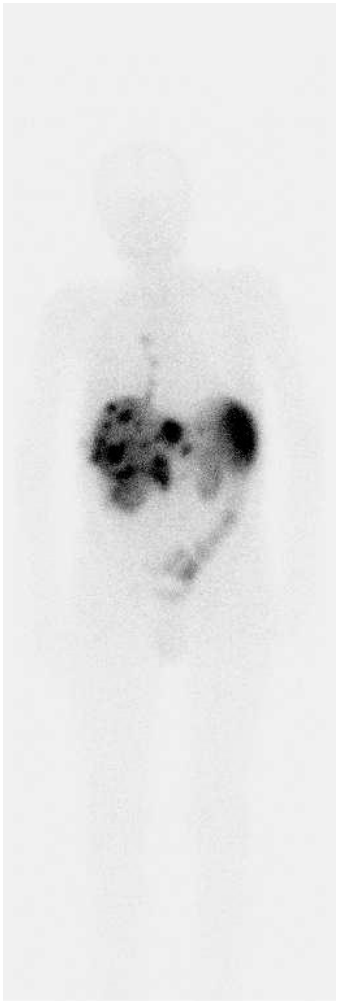
NET intestinali secernenti

P-NET (premedicazione con carbidopa)

^{111}In-pentetreotide (Octreoscan®)



Paziente portatore di neoplasia neuroendocrina ileale con localizzazioni epatiche e pleuriche



Anteriore 48h

Posteriore 48h

^{68}Ga-SST PET

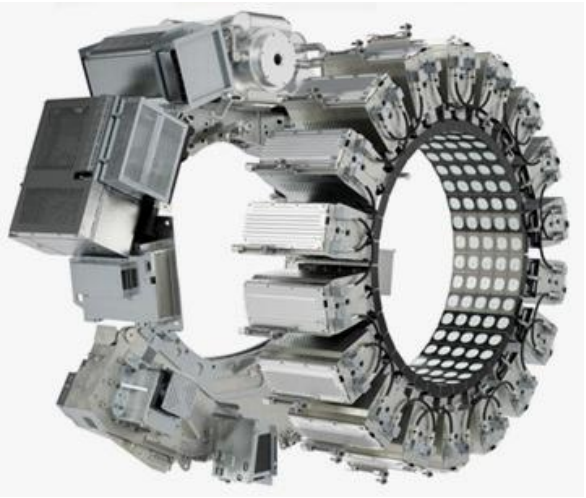
^{68}Ga: caratteristiche

Emivita: 68 minuti

Positron energy $E_{max\beta+}$ 1.9 MeV

Positron range R_{max} 9 mm

Generatore ^{68}Ge/^{68}Ga

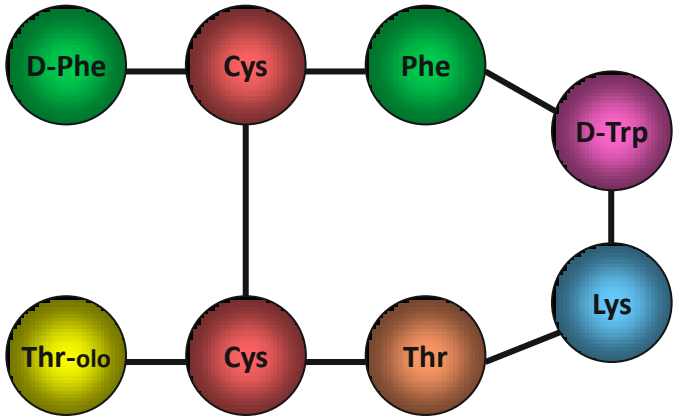


Radiofarmaci

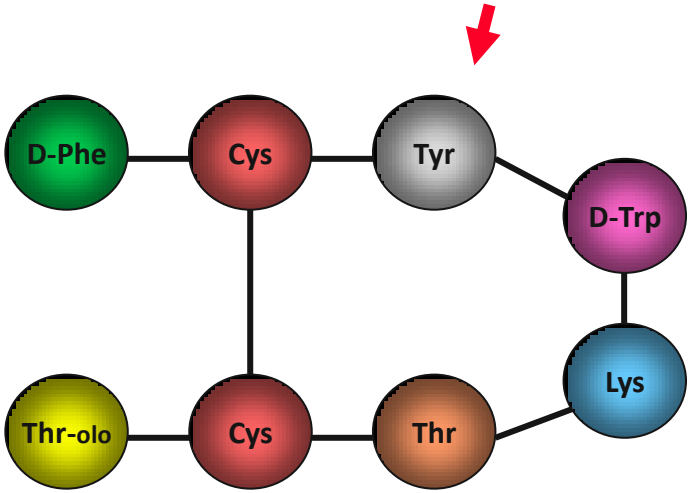
^{68}Ga-DOTATATE

^{68}Ga-DOTATOC

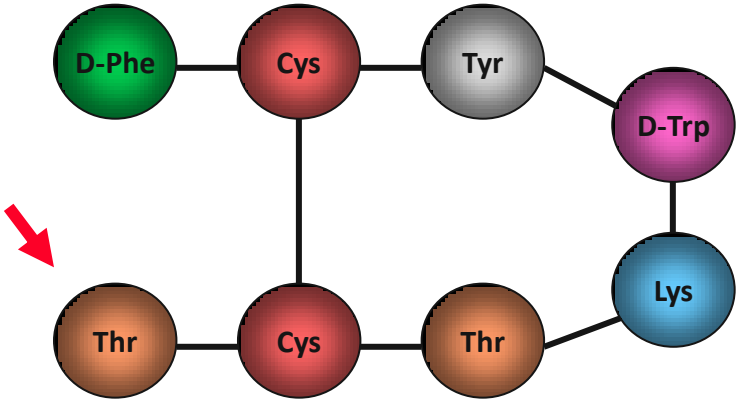
^{68}Ga-DOTANOC



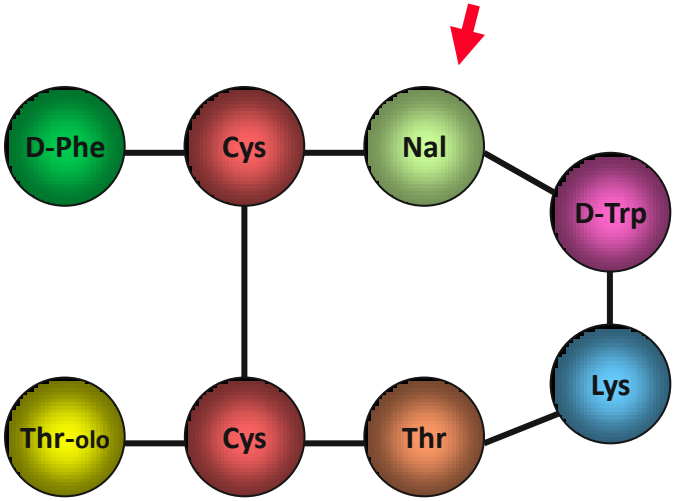
Octreotide



Tyr3-**oc**treotide (TOC)



Tyr3-octreot**ate** (TATE)



Nal3-**oc**treotide (NOC)

Endocrine (2012) 42:3–4
DOI 10.1007/s12020-012-9681-4

EDITORIAL

Gallium-68 somatostatin receptor PET/CT: Is it time to replace ^{111}Indium DTPA octreotide for patients with neuroendocrine tumors?

Kjell Öberg

^{68}Ga-SST PET/TC vs. ^{111}In-SST SPECT/TC

Migliore risoluzione spaziale

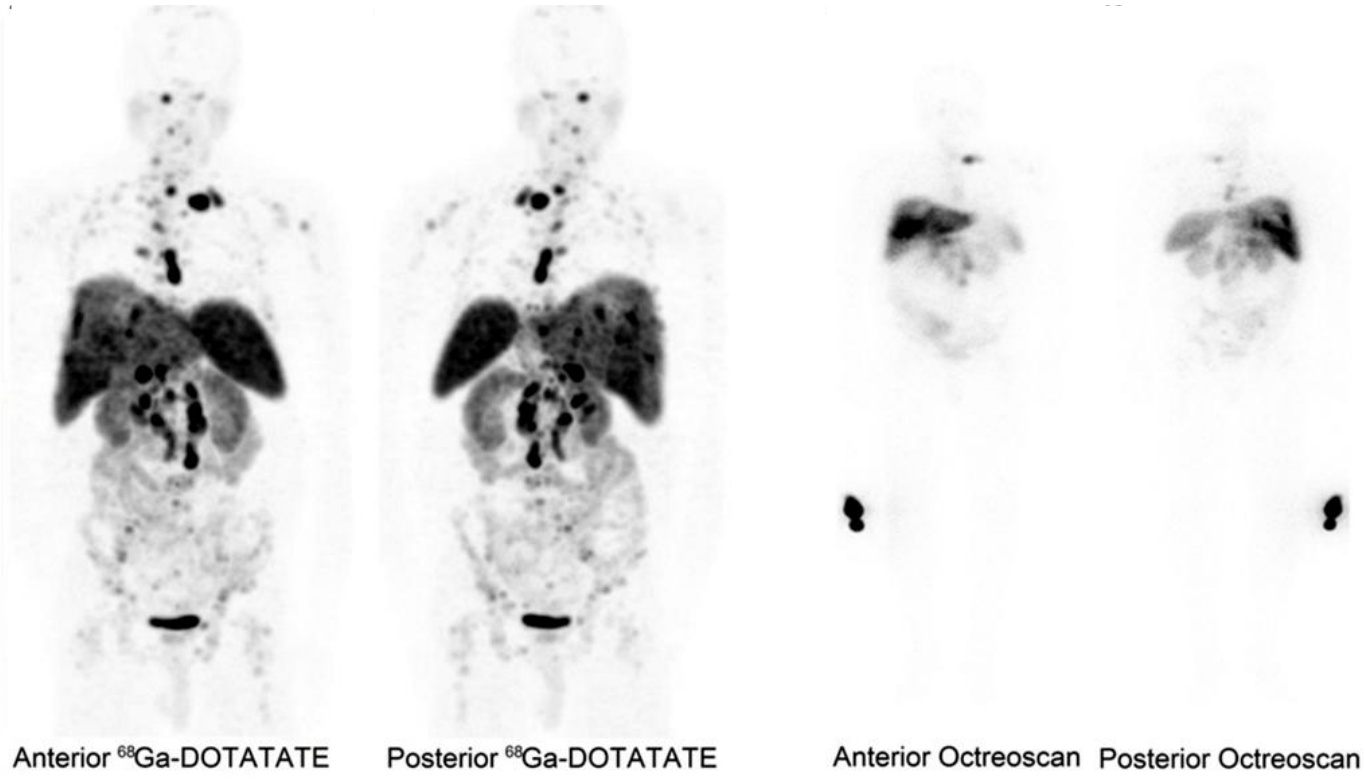
Quantificazione uptake (SUV)

Minor esposizione per il paziente

Più “patient friendly”

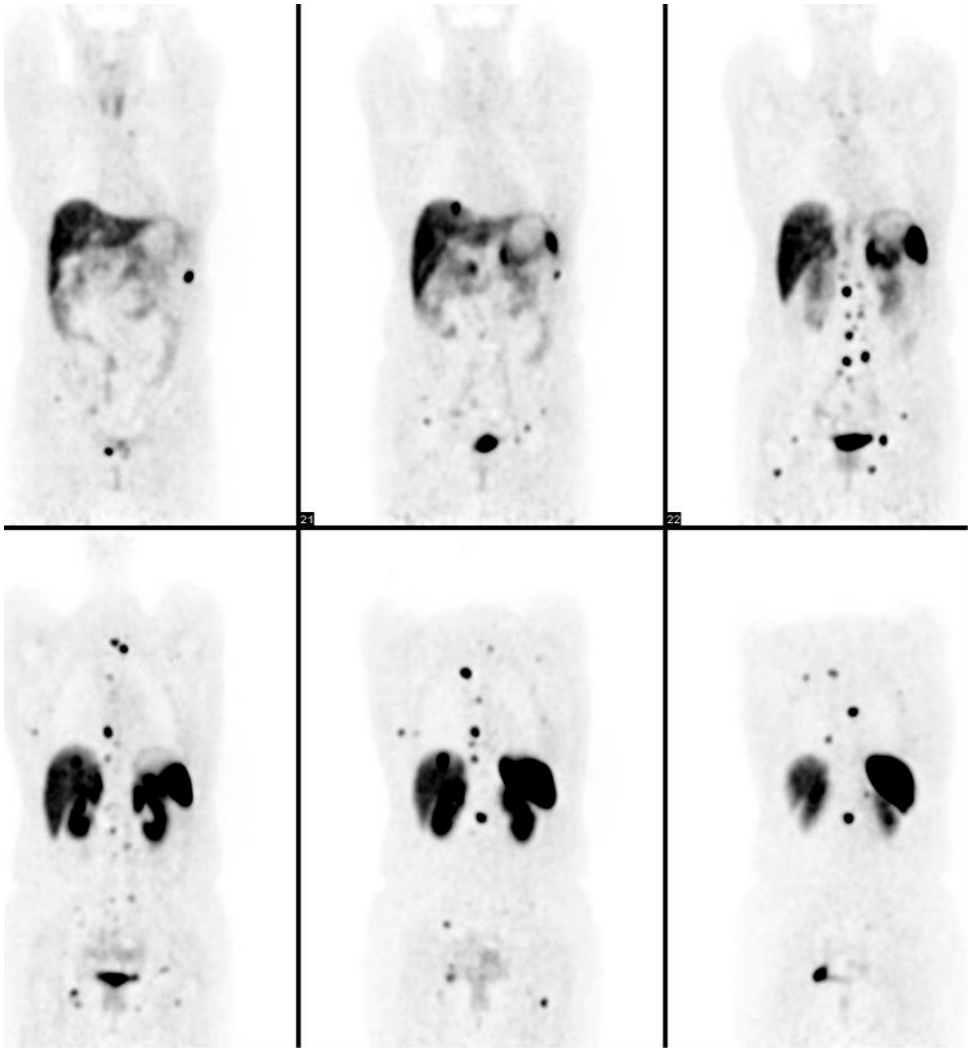
Minori costi

^{68}Ga-SST vs. ^{111}In-SST



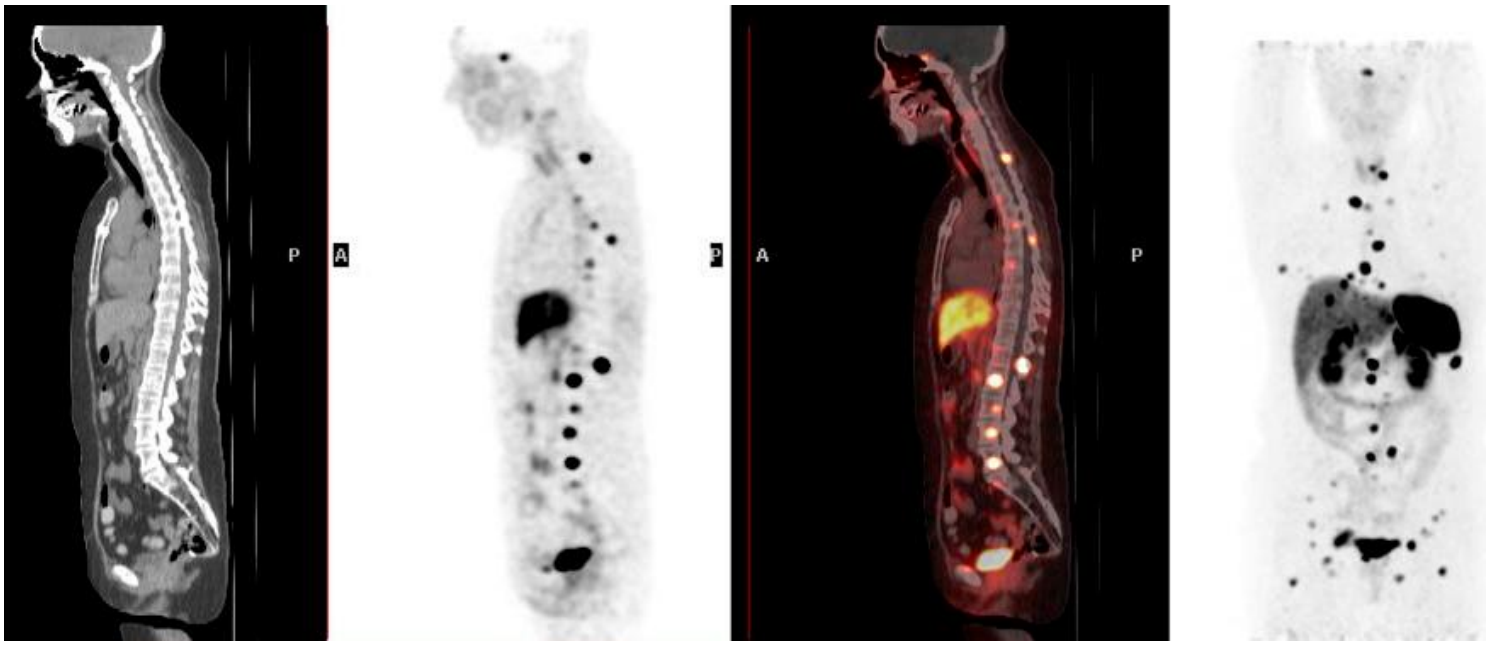
Anterior ^{68}Ga-DOTATATE Posterior ^{68}Ga-DOTATATE Anterior Octreoscan Posterior Octreoscan

^{68}Ga-DOTATOC PET/CT



Paziente portatore di tumore neuroendocrino ileale con localizzazioni scheletriche e linfonodali

^{68}Ga-DOTATOC PET/CT



Paziente portatore di tumore neuroendocrino del retto con localizzazioni scheletriche ed epatiche

^{64}Cu-SST PET

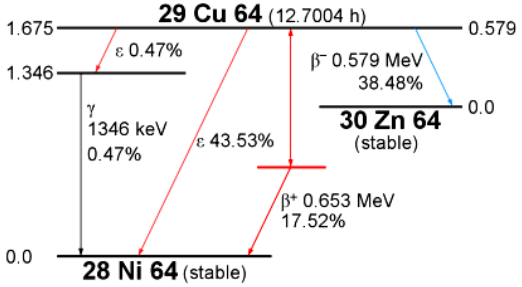
^{64}Cu: caratteristiche

Emivita: 12.7 h

Positron energy $E_{max\beta+}$ 0.58 MeV

Positron range R_{max} < 3 mm

Prodotto da ciclotrone

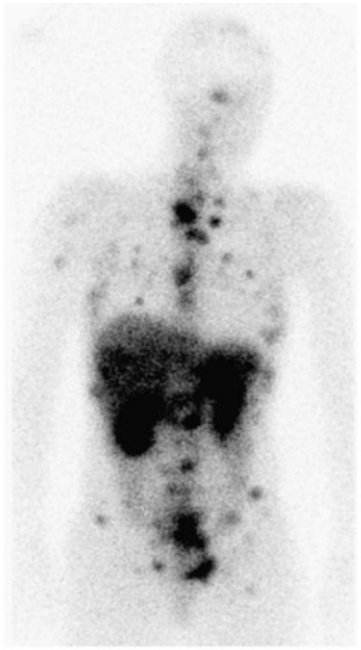


Radiofarmaci

^{64}Cu-DOTATATE

^{64}Cu-DOTATOC

^{64}Cu-DOTANOC



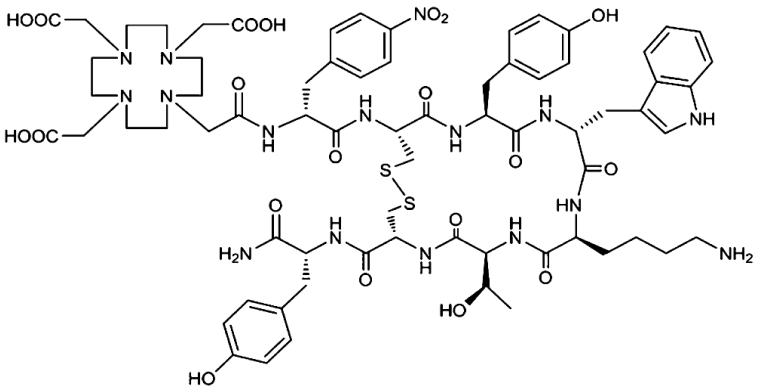
^{111}In-DTPA-octreotide

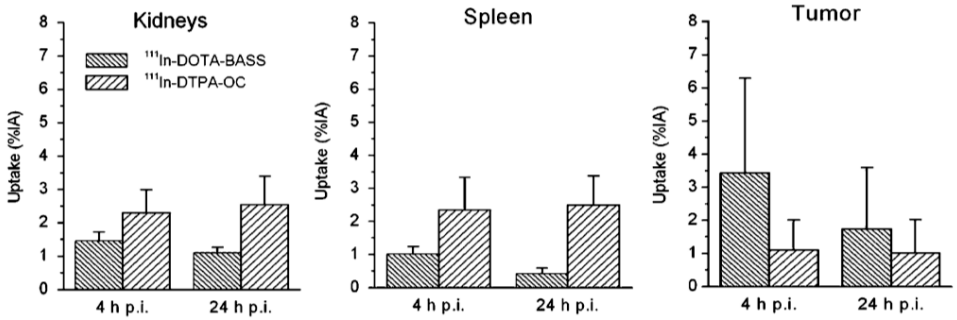
^{64}Cu-DOTATATE

Pfeifer A, J Nucl Med 2012

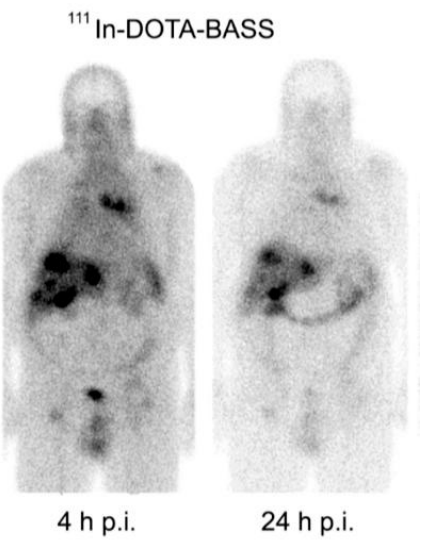
First Clinical Evidence That Imaging with Somatostatin Receptor Antagonists Is Feasible

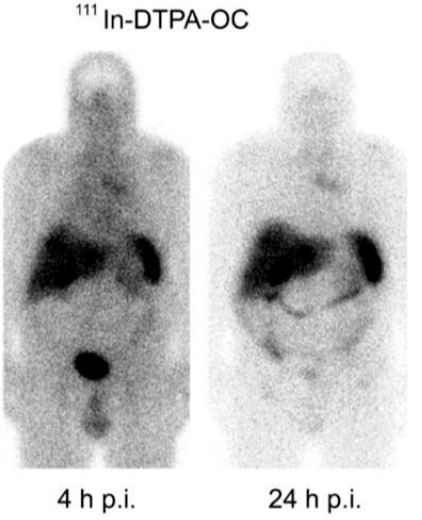
Damian Wild[1], Melpomeni Fani[1], Martin Behe[1], Ingo Brink[2], Jean E.F. Rivier[3], Jean Claude Reubi[4], Helmut R. Maecke[1], and Wolfgang A. Weber[1]



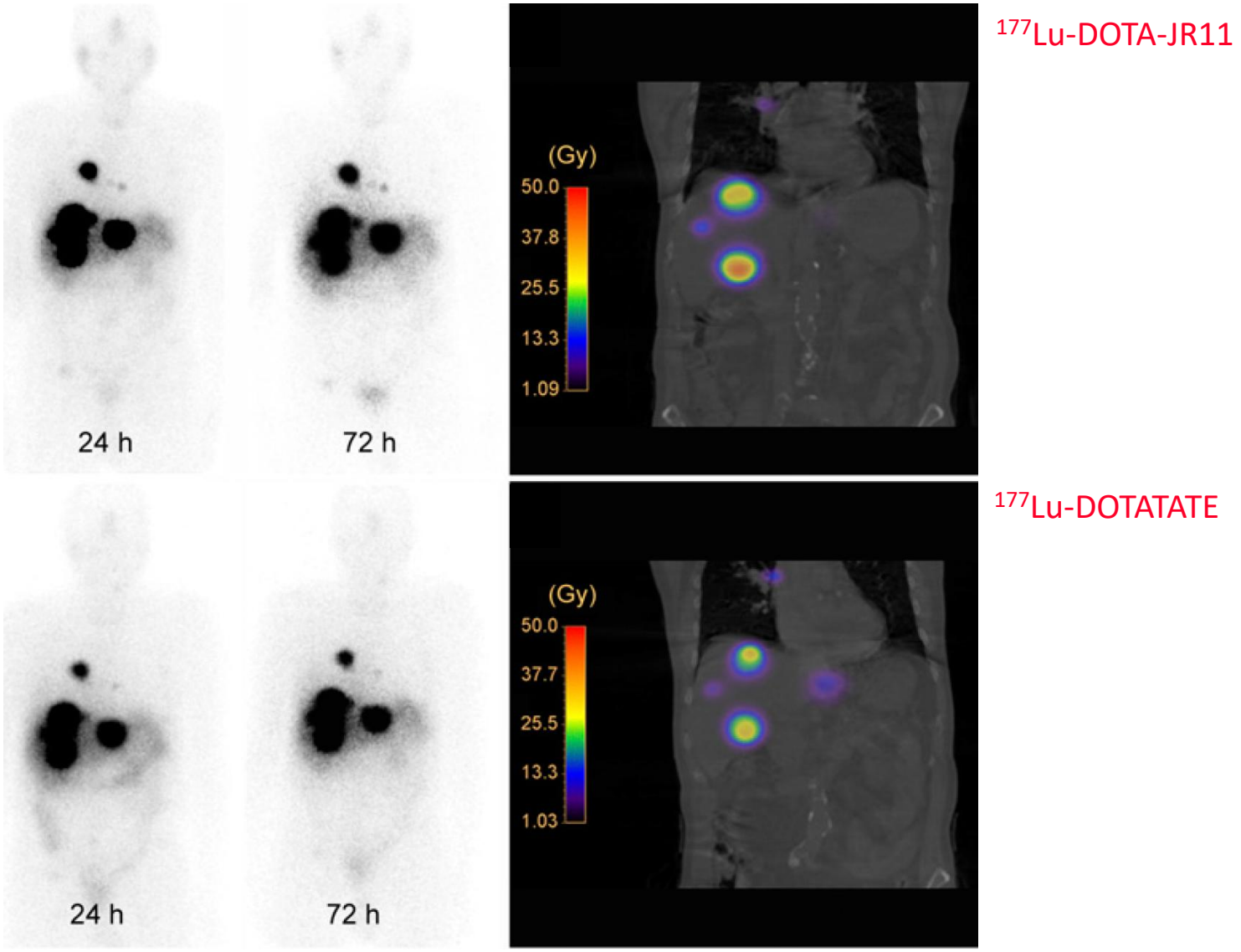


J Nucl Med, 2011





^{177}Lu-DOTA-JR11 vs. ^{177}Lu-DOTATATE

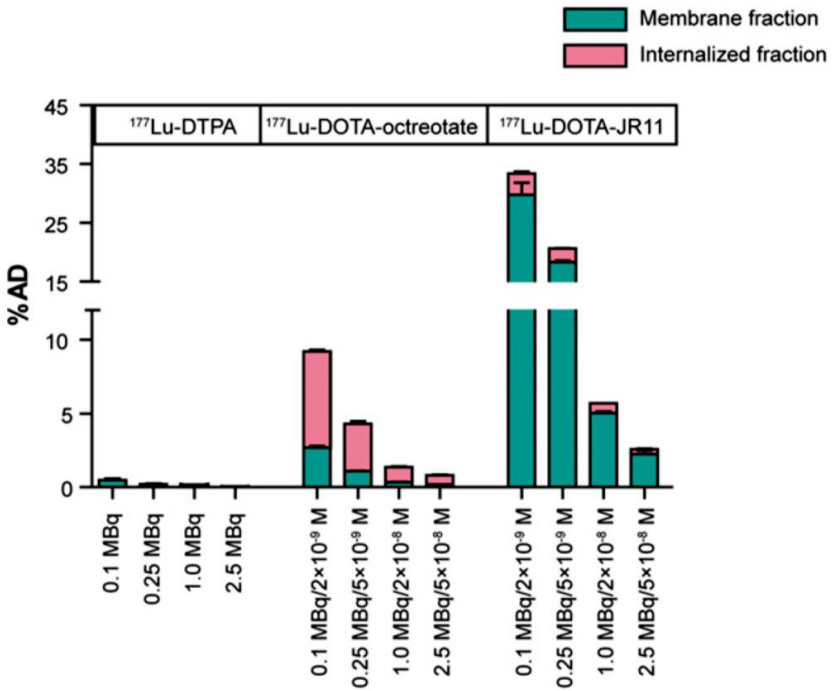


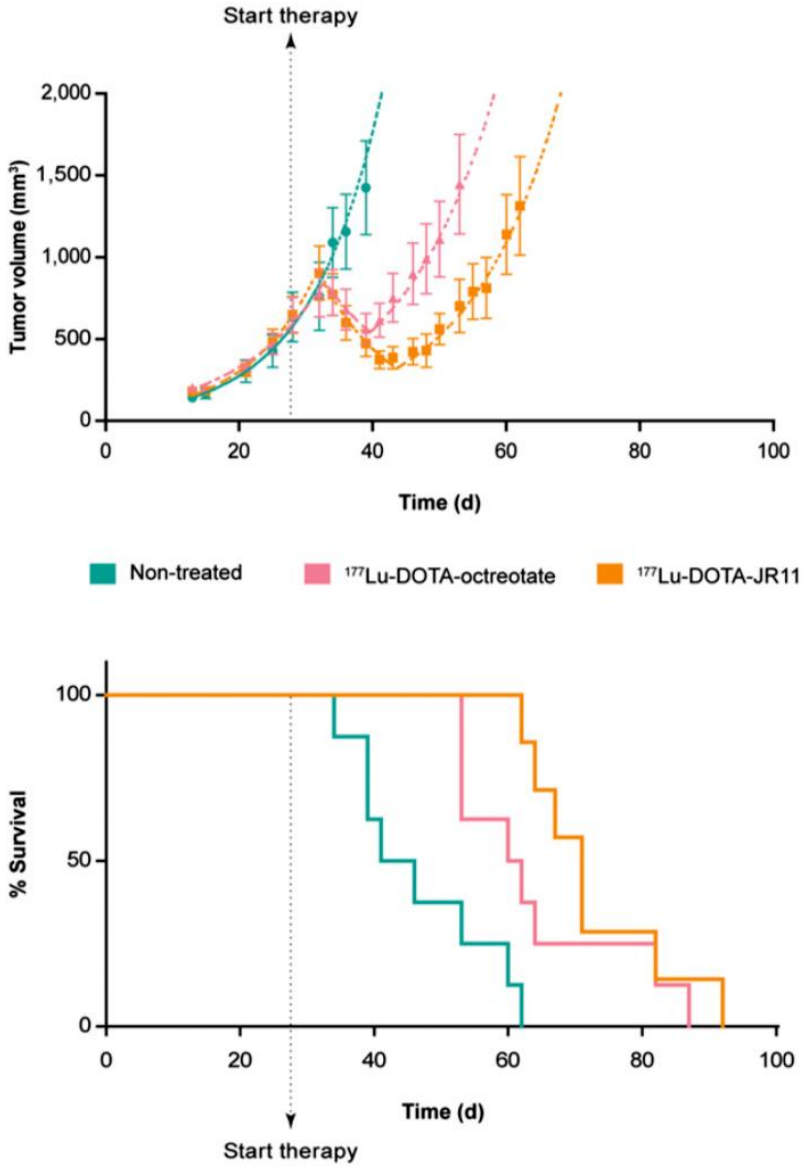
^{177}Lu-DOTA-JR11

^{177}Lu-DOTATATE

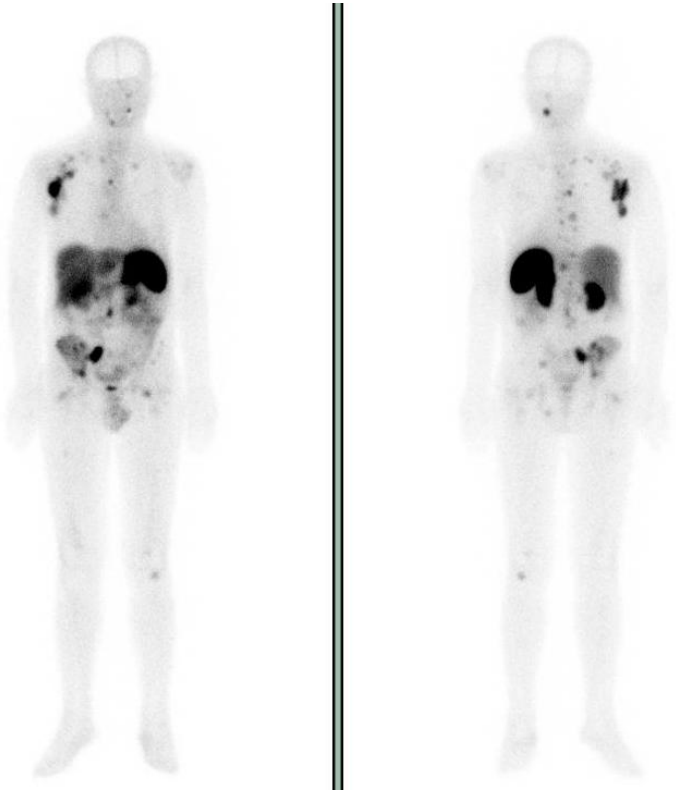
Wild D, J Nucl Med 2014

^{177}Lu-DOTA-JR11 vs. ^{177}Lu-DOTATATE

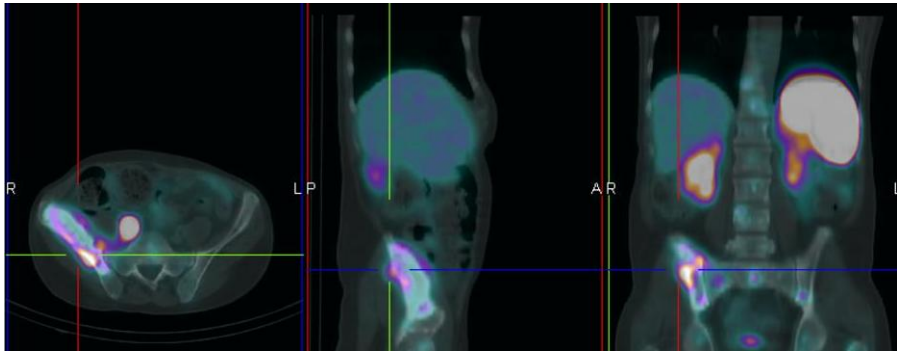




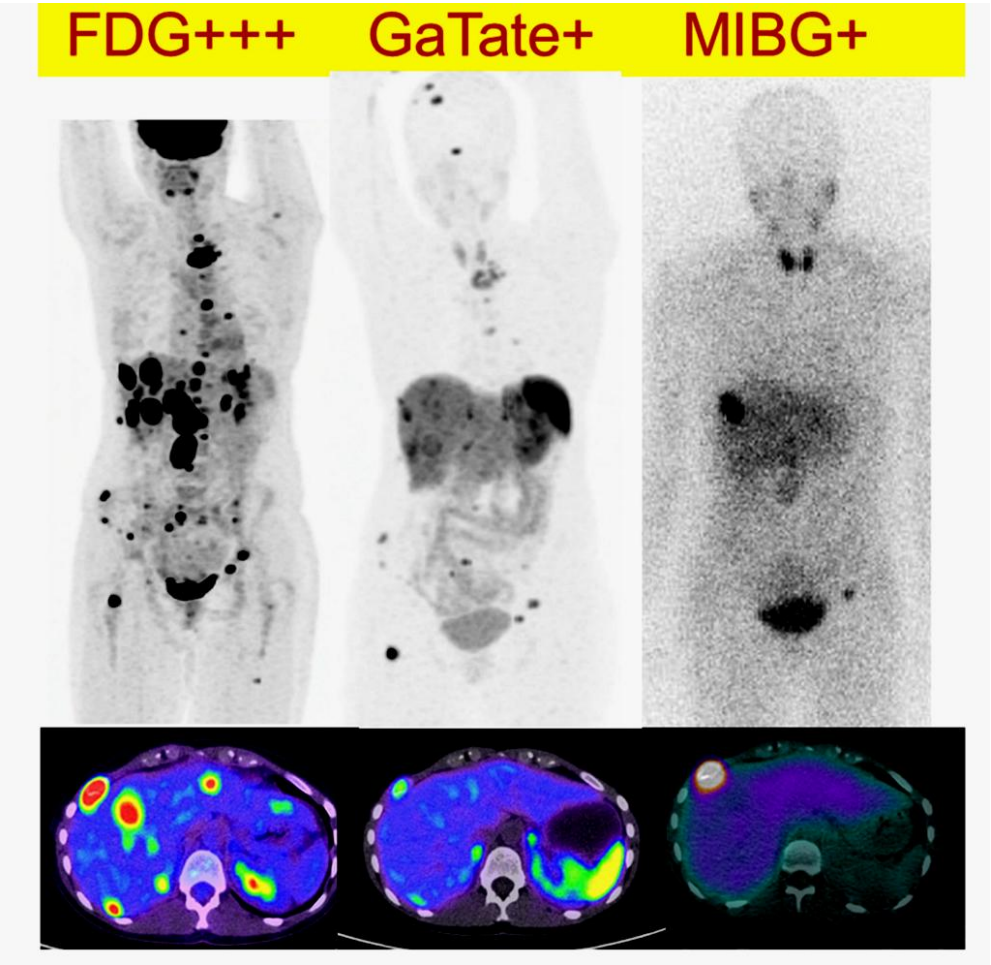
Dalm SU, J Nucl Med 2016



^{99m}Tc-Tecktreotid



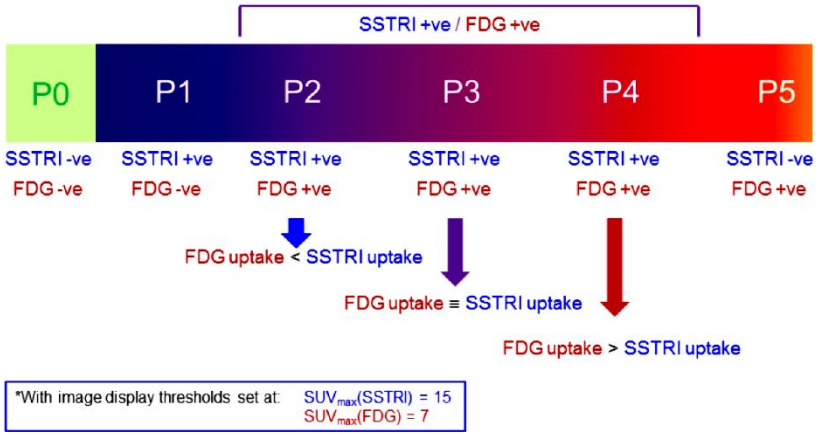
Paziente portatore di feocromocitoma metastatico con localizzazioni scheletriche

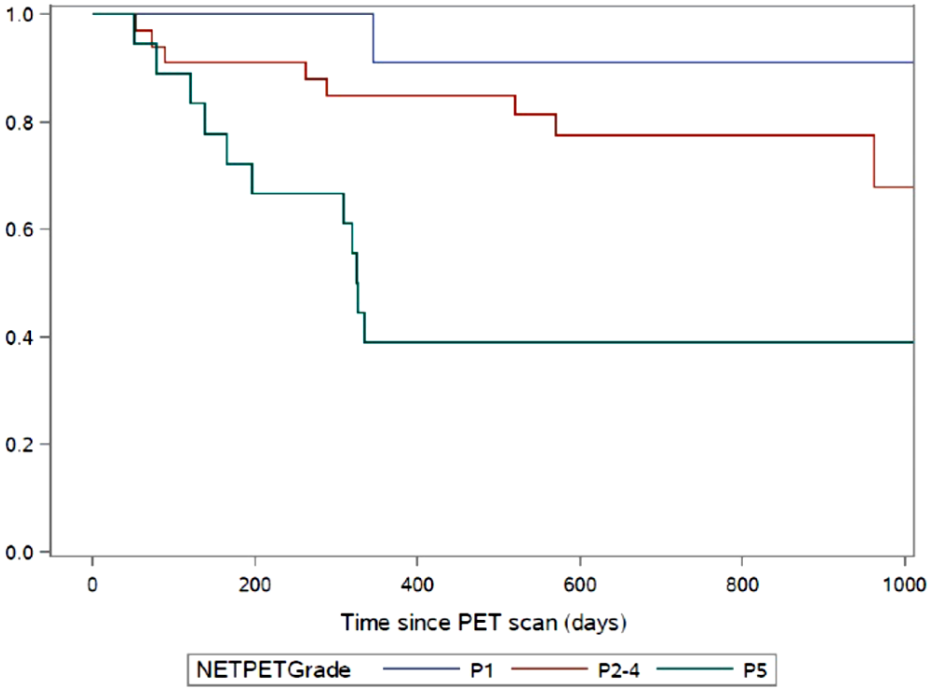


^{18}F-FDG PET-CT

C A Chiang, Cancer Imaging 2016

Paziente portatore di paraganglioma metastatico con localizzazioni scheletriche ed epatiche





DLH Chan, Theranostics 2017

Imaging funzionale: conclusioni

Utilità diagnostica

(ri) stadiazione

definizione carico di malattia

Utilità prognostica

quantificazione uptake (SUV)

Selezione pazienti

PRRT

131-I MIBG

Altre terapie

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