THERANOSTICS INSIGHTS

^{225}Ac-DOTATATE

Oncidium foundation

Radioisotope

Ac-225 Actinium-225
actinide metal
T½ : 9.9 days

Production

Th229 / Ac-225
generators; other methods
under development

Radiation

alpha particle (α)

Use

Treatment of advanced gastroenteropancreatic neuroendocrine tumors (GEP-NETs)

Target/Mechanism

DOTA-TATE is an octapeptide with a high affinity for somatostatin receptors, mainly type 2 (SSTR2), overexpressed in NETs.
225Ac-DOTA-TATE is internalized in the tumor cell and induces DNA breakage causing cell death

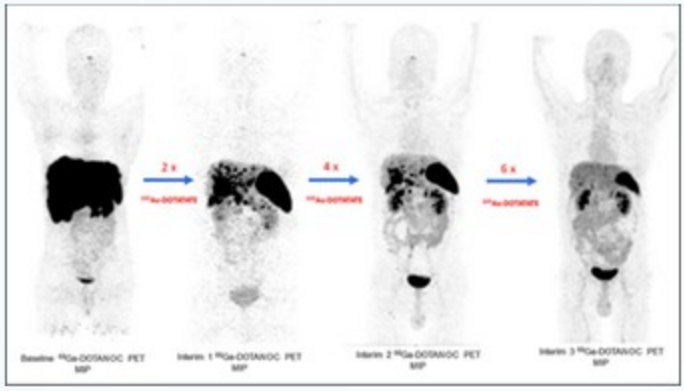
Insight

The long-term outcome results of 225Ac-DOTATATE , median follow-up of 24 mo, was published by the group of Dr Bal.

N patients: 91 with GEP-NET = 57 pre-treated with 177 Lu-DOTATATE and 34 patients without pre-treatment

Treatment: 225Ac-DOTATATE (100-120 kBq/kg) i.v. with renal protection.
~ 4 cycles with intervals of 8 weeks.
Capecitabine was given as a radiosensitizer (2 g/day) from day 0 to 14 of every 225Ac-DOTATATE cycle.

Results:
Of the 79 patients
2 (2.5%) Complete Response;
38 (48%) Partial Response;
23 (29%) Stable Disease;
16 (20.2%) Progressive Disease.



The authors found that “median OS was not attained, and the 24-mo OS probability was 70.8%. Median PFS was also not reached, with a 24-mo PFS probability of 67.5%. A significant clinical benefit was achieved after 225Ac-DOTATATE therapy, with minimal treatment-related toxicities.”