

Background

Peptide-related radionuclide therapy (PRRT) is a therapeutic option for patients with somatostatin receptor (SSTR)-positive with tumors in advanced stages and inoperable metastases endocrine. The tumor cells to overexpress SSTR, which can be targeted with radiolabeled analogs.

The evaluation response includes reduce of size tumor, symptoms, biochemical and improved quality of life.

Peptide-related radionuclide therapy (PRRT) is a therapeutic option that can be combined with other treatment options

Objetives

The aim of the study was to describe our experience using of peptide receptor radionuclide therapy (PRRT) in patients with functioning neuroendocrine tumours (FNTs) and to determine survival rates and symptoms-free probability after the therapy.

Methods

Twelve patients with FNTs were qualified to PRRT (administration of 150 mCi of ¹⁷⁷Lu-DOTATATE with an interval of 6-9 weeks, maximum 4 cycles of therapy) based on positive SRS (somatostatin receptor scintigraphy) between 01 August 2009 and 30 September 2013 were included. Two patients two rescue therapy.

Follow up was performed three years later. A total of 5 men and 7 women with Karnofsky's index >50% were included. Kaplan-Meier were used for survival analysis.

Results

Four cycles was administered in 8 patients, two cycles in one patient and one cycle in two patients. Mean of age was 51 years old (range: 37-68). Median of time between diagnostic disease and first cycle of therapy was 20 months (RIQ: 4 - 64). Three years patient survival was 48%, progression-free probability after PRRT was 52% and symptoms-free probability was 83%. The median time-free of symptoms was 28 months (RIQ: 10 - 51). At the present time, 6/12 patients are alive, stabilization of the disease was observed in 3/6, complete remission in 1/6 and progression of the disease in 2/6 patients, 5/6 patients are being treated with sandostatin LAR. Median observation time was 14 months (RIQ: 4 - 29). Six patients, died four of them due to progression of the disease, one due to sepsis and one due to bleeding. After PRRT we observe the following adverse effects: abdominal pain (n=4), renal dysfunction (n=2) and hair loss (n=3).

Afiliactions

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Results

Patient	age of onset treatment (years)	Karnofsky(%)	No. Therapys	treatment time (months)	salvaje therapy	post therapy response	additional procedures	final response	current treatment
1	37	100	4	11		RP	residual lesions surgery	RP	Sandostatin LAR
2	66	100	4	6		PR		Progression	Sandostatin LAR
3	49	100	2	2		PR		Death	
4	62	60	1	0		# Death			
5	41	100	4	8	2	RP	radioablation	RC	Sandostatin LAR
6	53	100	4	10	2	RP	resection of liver metastases and diaphragm	RC	Asintomatic without tretment
7	68	70	1	0		* Death			
8	41	100	4	7	2	RP	resection of the primary tumor in the ileum	RP	Sandostatin LAR
9	48	70	2	2		# Death			
10	50	100	4	12		PR		Progression	Sandostatin LAR
11	67	100	4	7		PR		Death	
12	40	100	4	7		RP		Death	

RC: Complete response
RP: Partial response
PR: Poor response
* death by progression
death from another cause

Symptoms Evolution

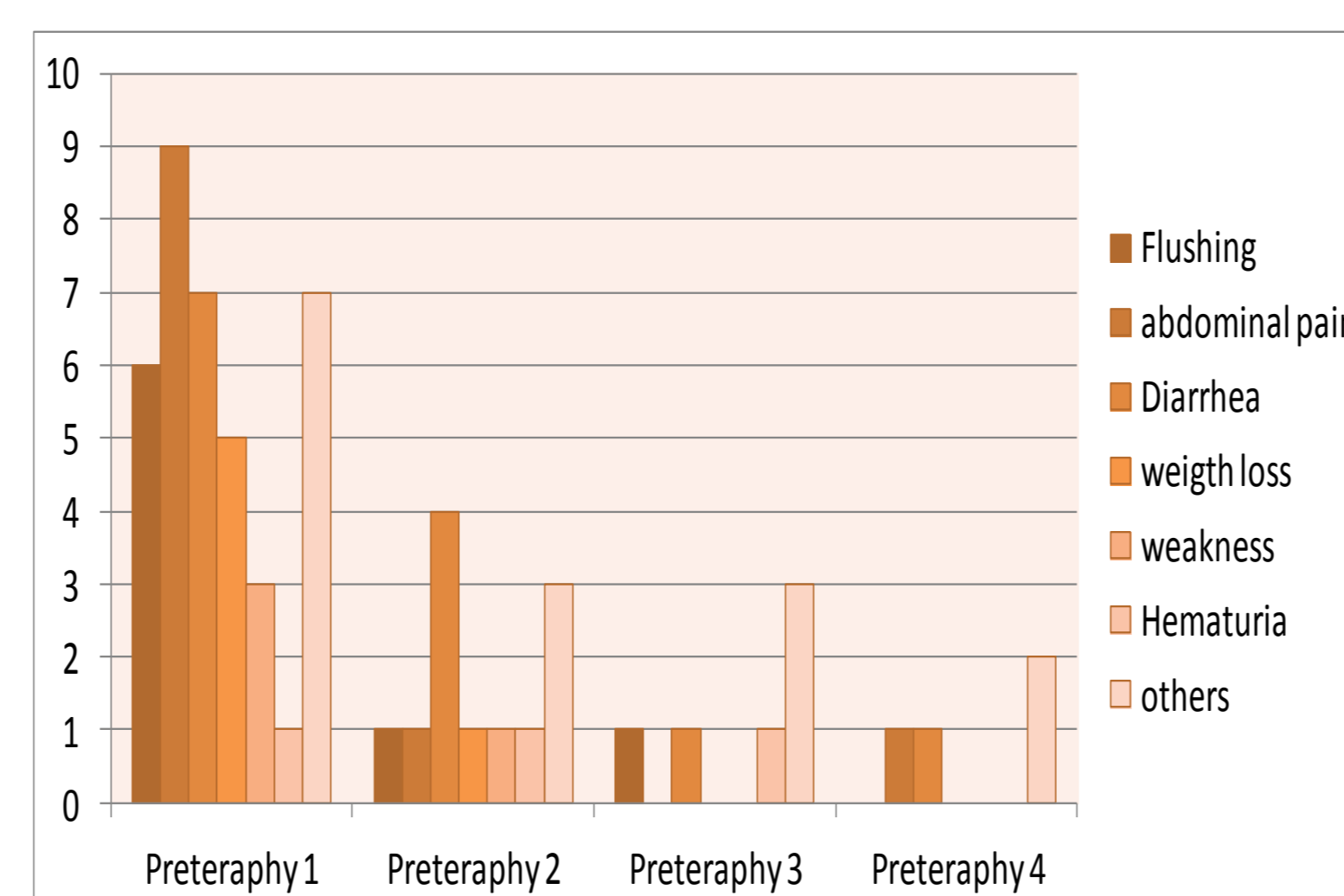


Fig 1 Symptoms evolution

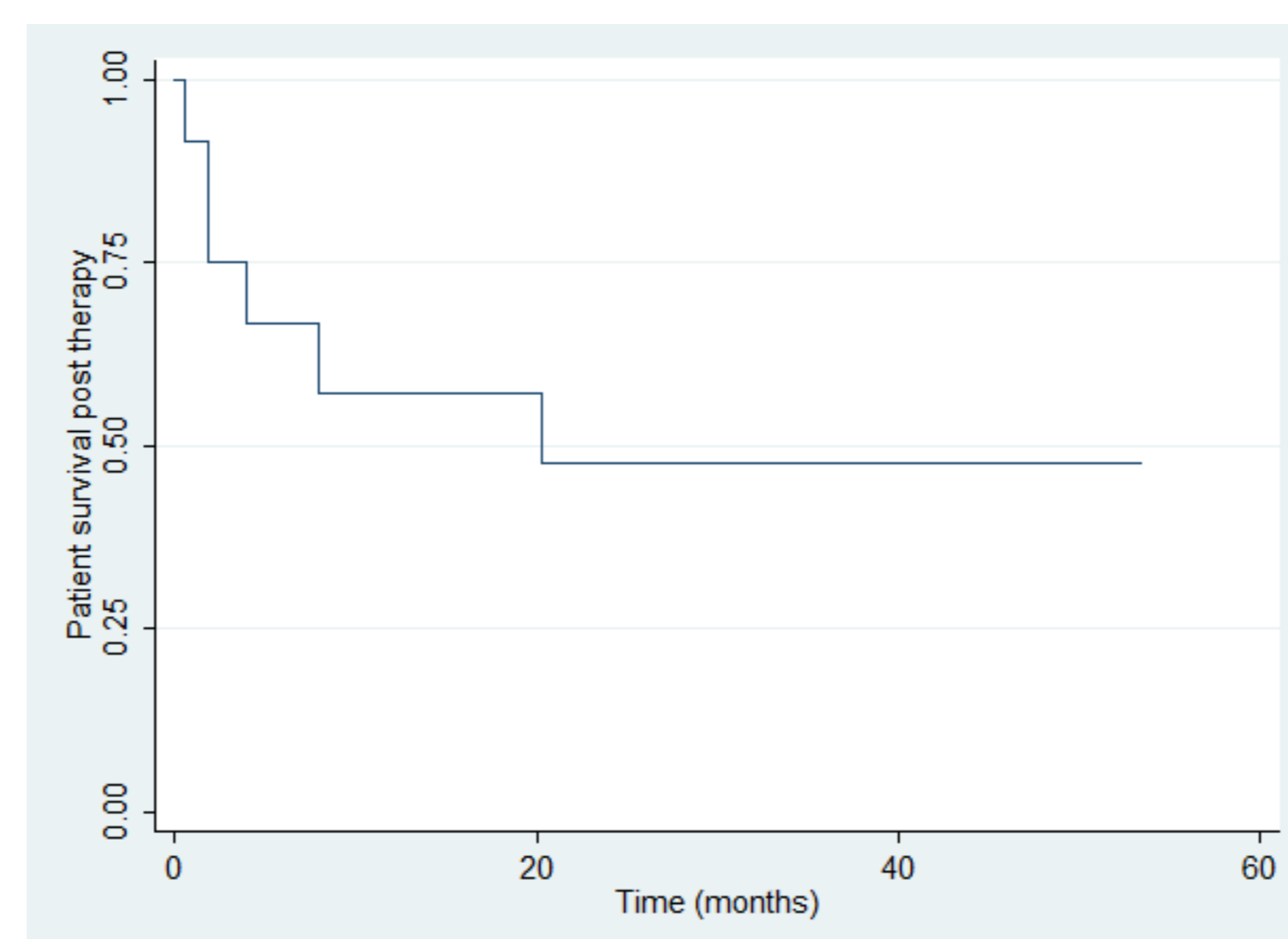


Figure 3. The patient's survival after ¹⁷⁷Lu-DOTATATE therapy in patients

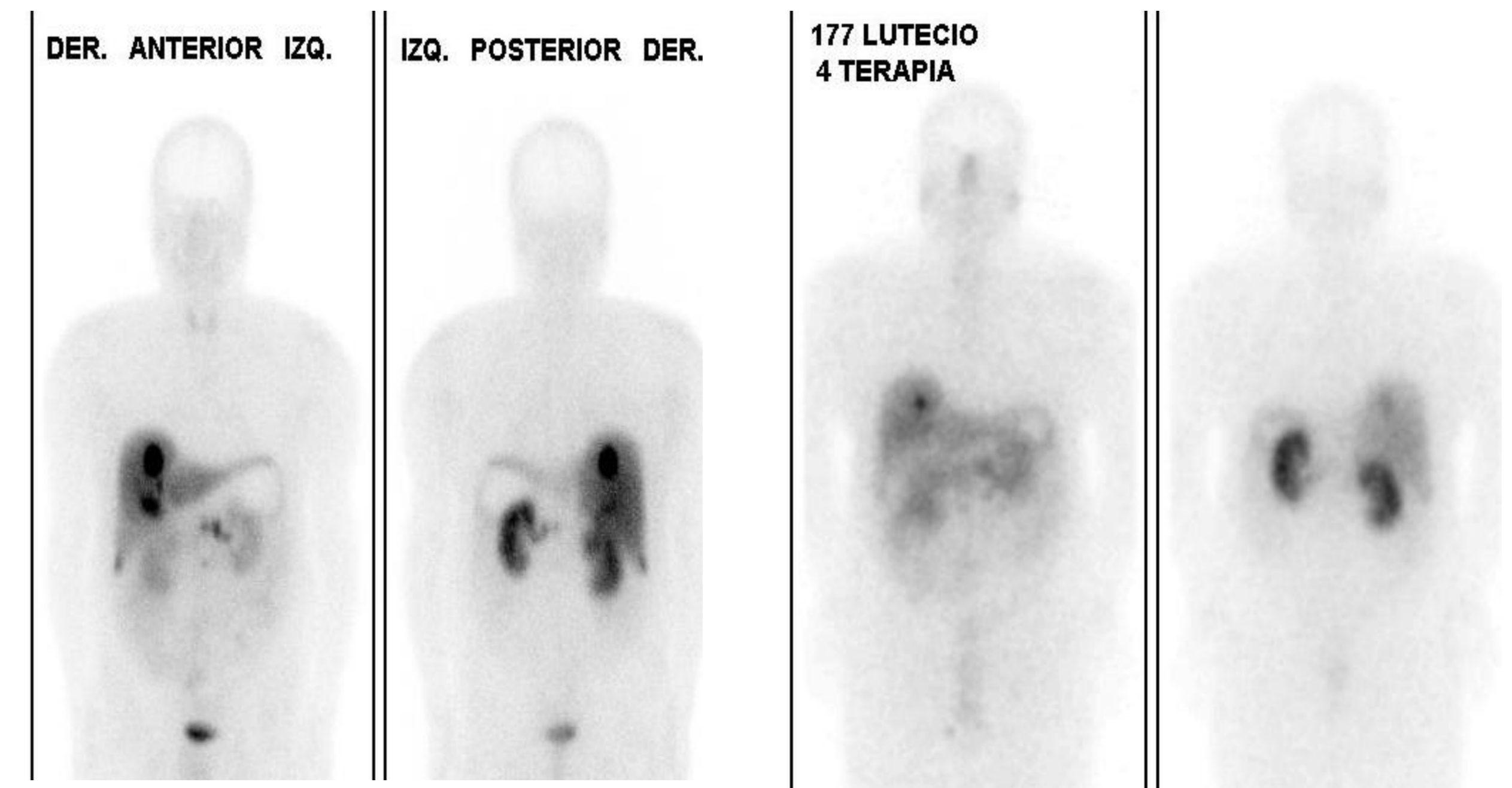


Fig 2. 41 years old man. TNE well-differentiated pancreatic, liver metastases. After 4th subsequent response to therapy ¹⁷⁷Lu-DOTATATE two lesions disappear and the residual lesion decreased in size and uptake.

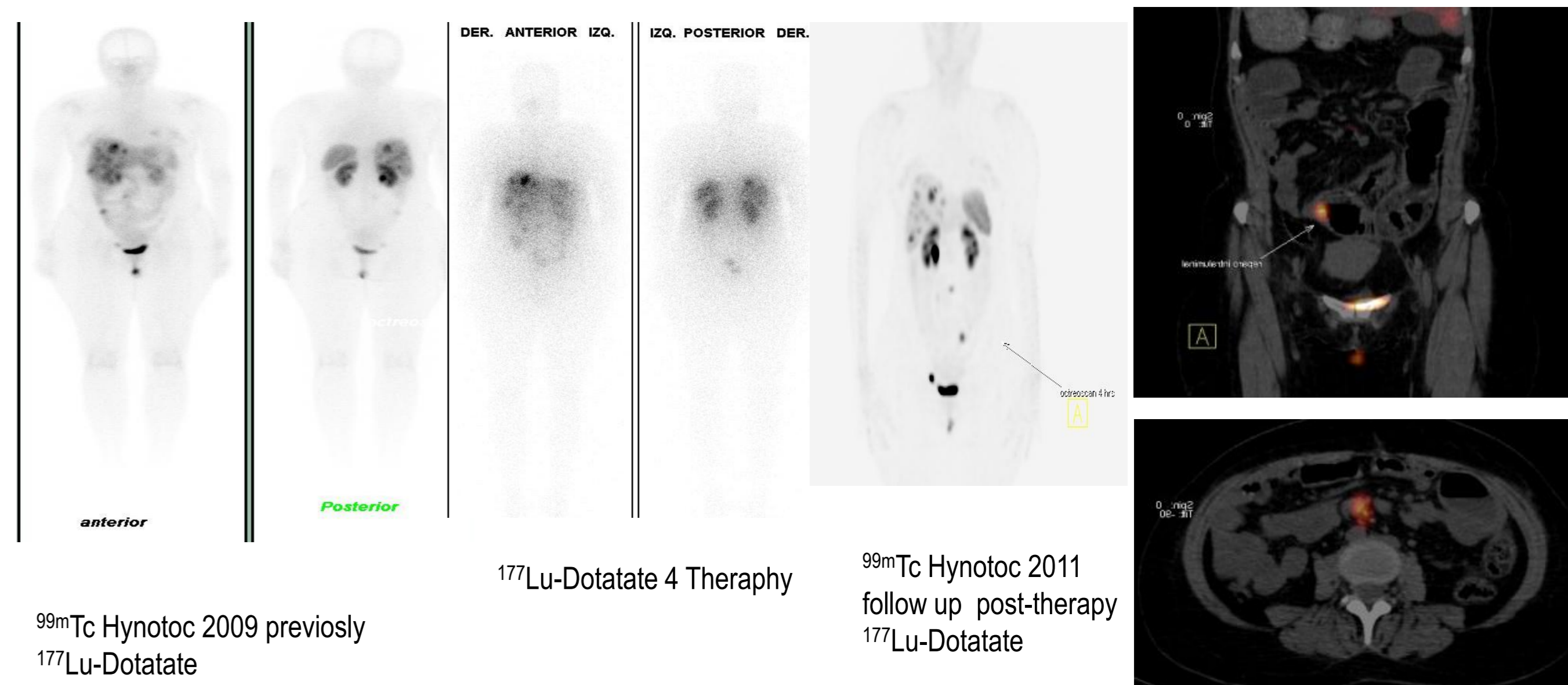


Fig 4. 41 years old Female with liver metastases, NETs unknown primary. Decreased liver metastases, monitoring ^{99m}Tc Hynotec 2011, relapse of liver metastases and new lesion in ileum, surgery, primary tumor of ileum, she received after two rescue therapies of ¹⁷⁷Lu-DOTATATE (300 mCi)

Conclusion

Therapy with ¹⁷⁷Lu-DOTATATE is a treatment option in patients with FNTs, leading to stabilization or reduction of the symptoms and slowing down disease progression. Studies with more patients are necessary for identify risk factors for disease progression and death

Bibliography

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