



Peptide Receptor Radionuclide Therapy (PRRT)

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Disclosures

- Consultancy/Advisory Board (to institution)
 - Taiho Oncology
 - Ipsen
- Research/Trial Support (to institution)
 - BMS
 - Celgene
 - Astrazeneca
 - BTG
 - Advanced Accelerator Applications
 - Array Biopharma

PRRT – Learning Objectives

Peptide Receptor Radionuclide
Therapy (PRRT) – Our GI Care
Team based approach

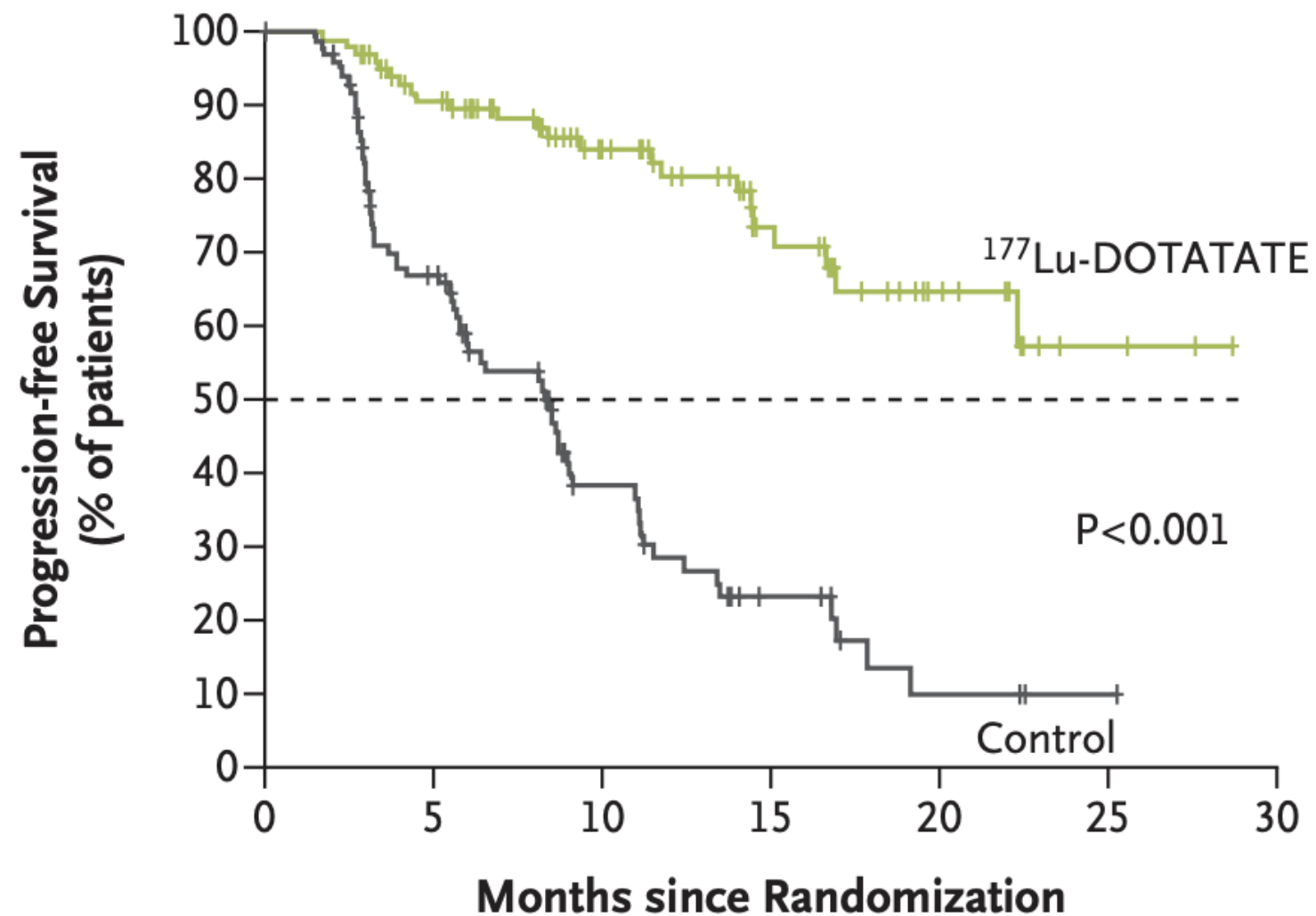


Background

PRRT

PRRT – NEJM
Original
Article Jan
2017

A Progression-free Survival

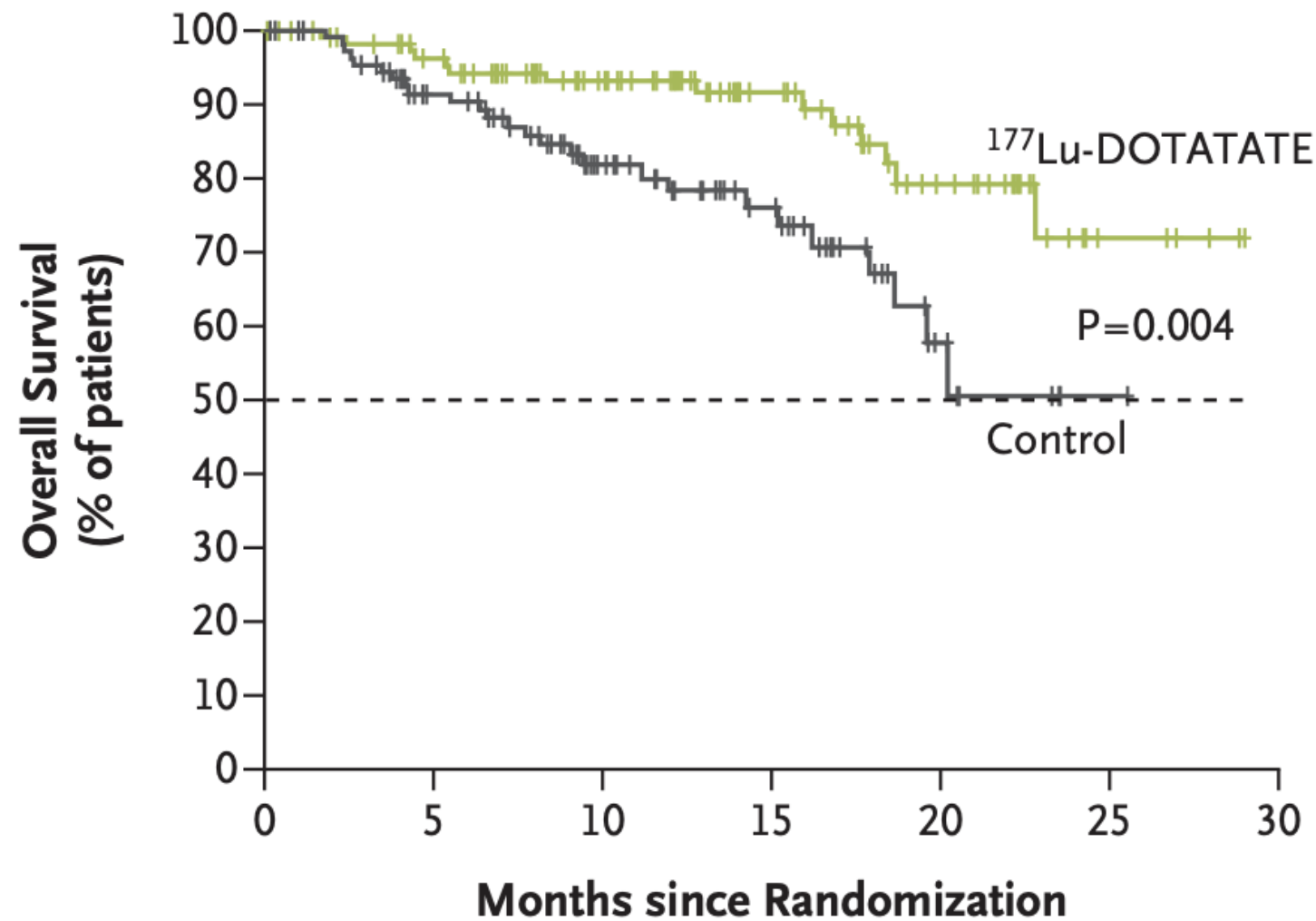


No. at Risk

¹⁷⁷ Lu-DOTATATE group	116	97	76	59	42	28	19	12	3	2	0
Control group	113	80	47	28	17	10	4	3	1	0	0

PRRT – NEJM
Original
Article Jan
2017

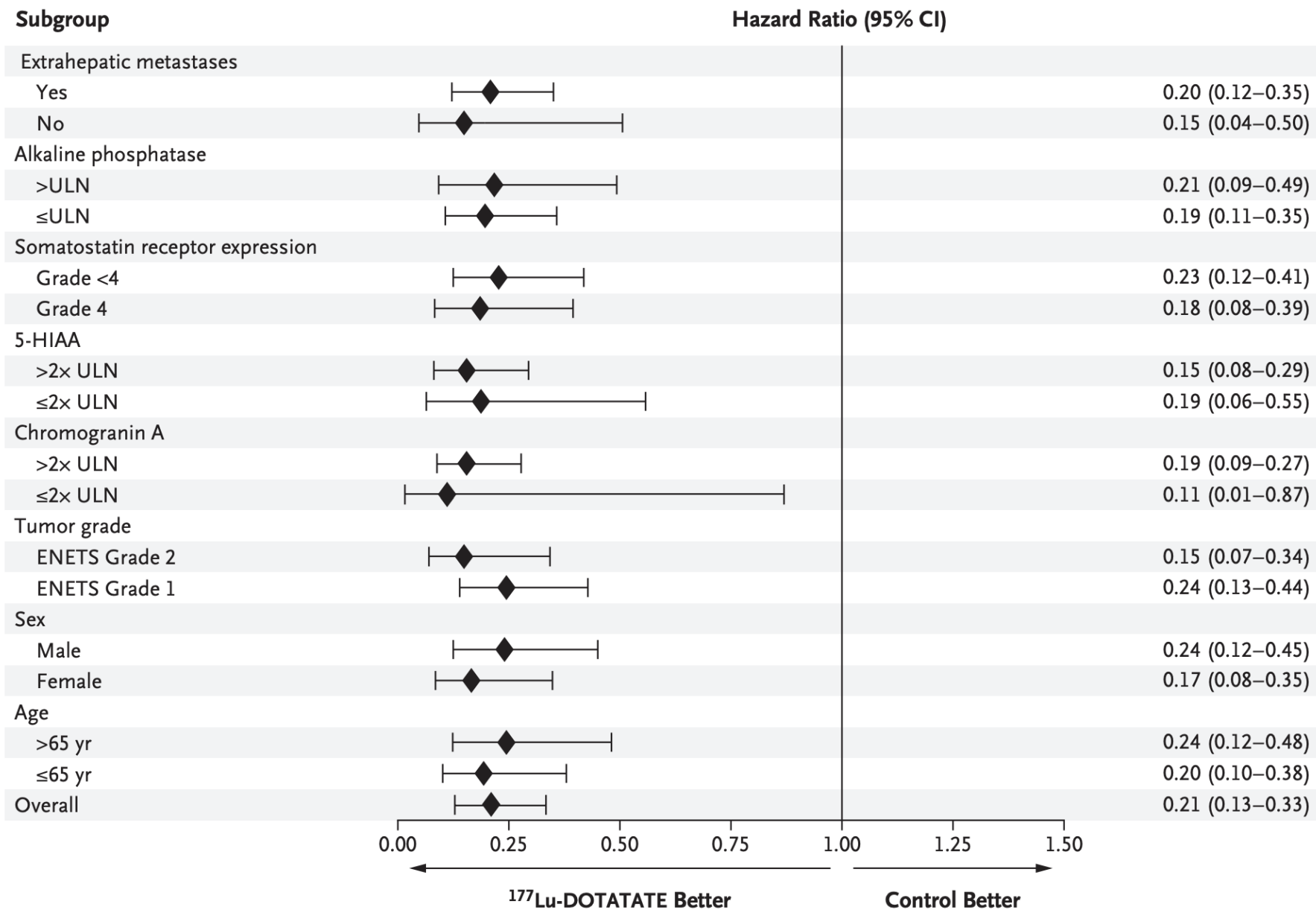
B Overall Survival (Interim Analysis)



No. at Risk

¹⁷⁷ Lu-DOTATATE group	116	108	96	79	64	47	31	21	8	3	0
Control group	113	103	83	64	41	32	17	5	1	0	0

PRRT – NEJM
Original
Article Jan
2017



PRRT – NEJM
Original
Article Jan
2017

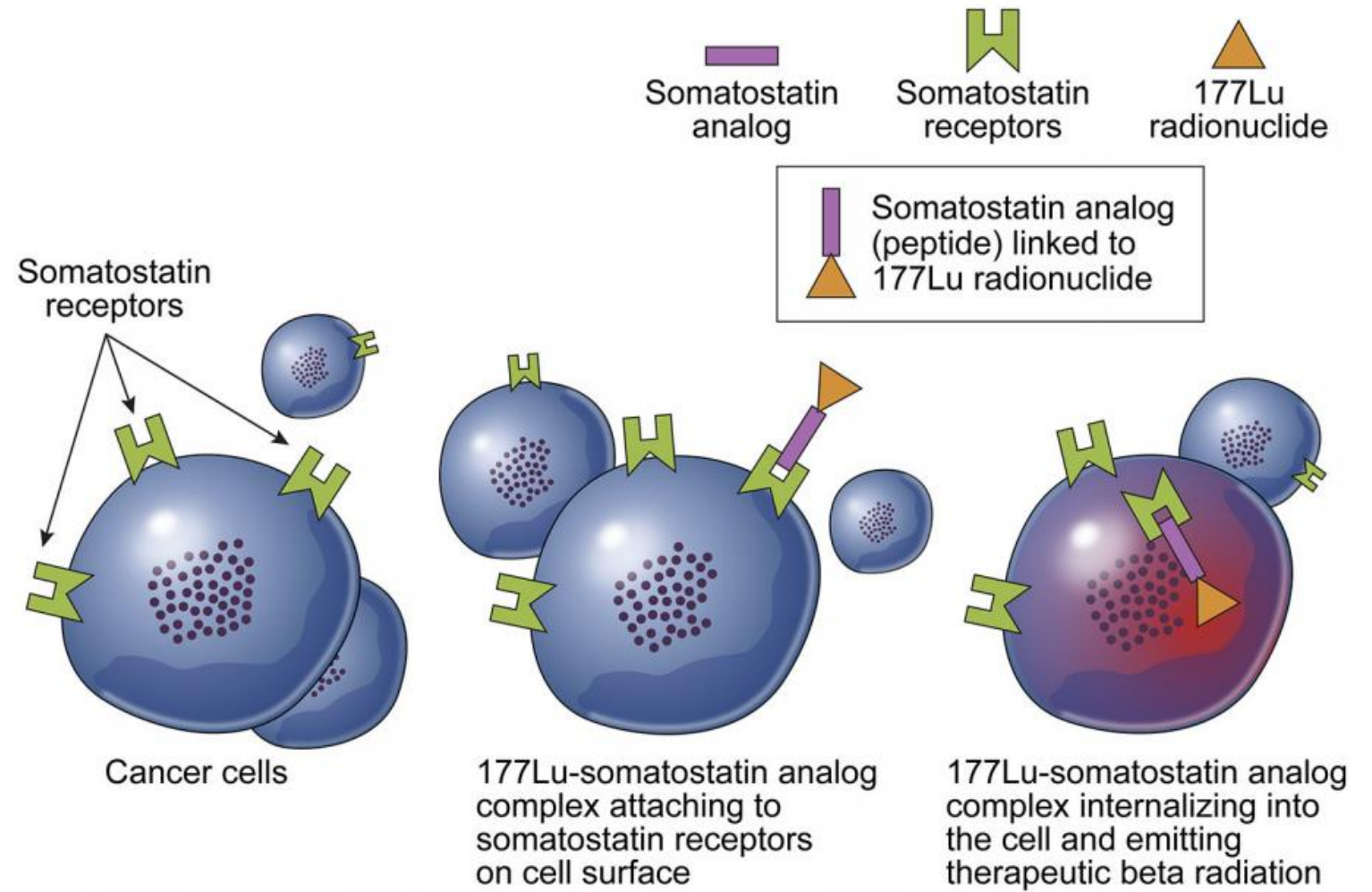
Event	¹⁷⁷ Lu-Dotatate Group (N=111)	
	Any Grade	Grade 3 or 4
	<i>number of patients</i>	
Any adverse event	105 (95)	46 (41)
Gastrointestinal disorders		
Nausea	65 (59)	4 (4)
Vomiting	52 (47)	8 (7)
Abdominal pain	29 (26)	3 (3)
Diarrhea	32 (29)	3 (3)
Distension	14 (13)	0
General disorders		
Fatigue or asthenia	44 (40)	2 (2)
Edema peripheral	16 (14)	0
Blood disorders		
Thrombocytopenia	28 (25)	2 (2)
Anemia	16 (14)	0
Lymphopenia	20 (18)	10 (9)
Leukopenia	11 (10)	1 (1)
Neutropenia	6 (5)	1 (1)

PRRT – NEJM
Original
Article Jan
2017

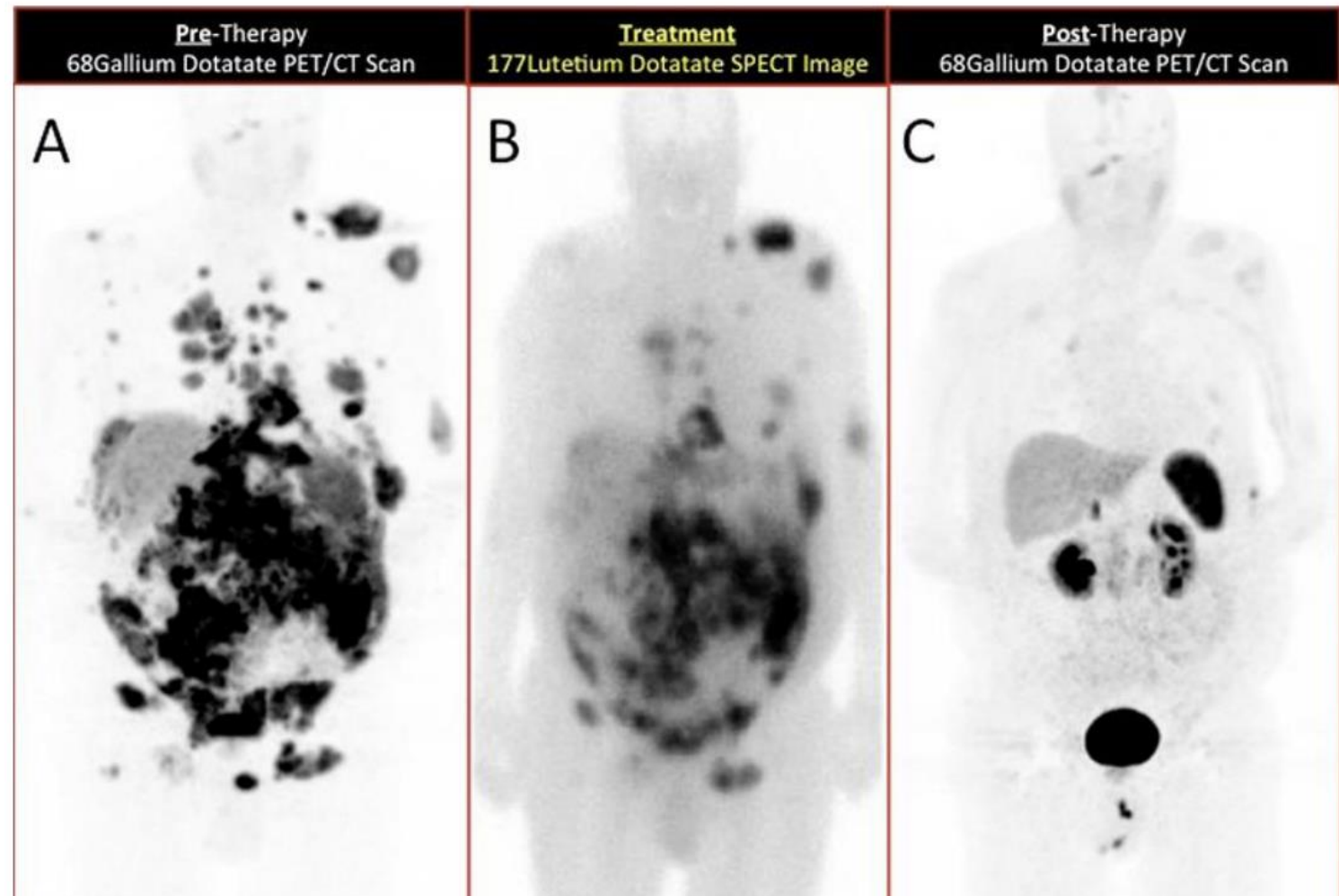
Event	¹⁷⁷ Lu-Dotatate Group (N=111)	
	Any Grade	Grade 3 or 4
	<i>number of patients</i>	
Any adverse event	105 (95)	46 (41)
Musculoskeletal disorders		
Musculoskeletal pain	32 (29)	2 (2)
Nutrition disorders		
Decreased appetite	20 (18)	0
Nervous system disorders		
Headache	18 (16)	0
Dizziness	12 (11)	0
Vascular disorders		
Flushing	14 (13)	1 (1)
Skin disorders		
Alopecia	12 (11)	0
Respiratory disorders		
Cough	12 (11)	0

PRRT

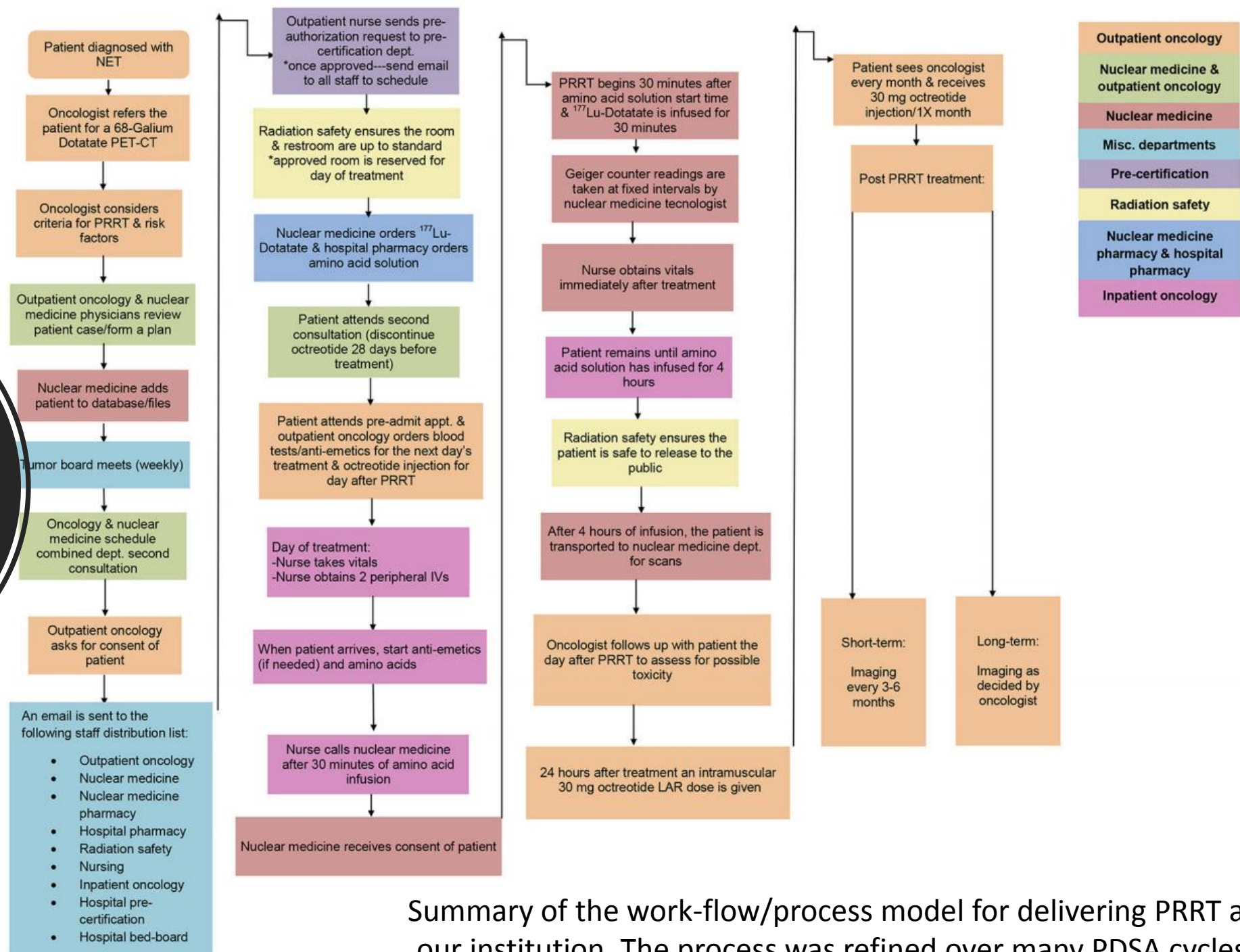
Figure 1: Simplistic overview illustrating the ^{177}Lu -Dotatate peptide receptor radionuclide therapy



THERA(py)-
(diag)NOSTICS



PRRT Care Process Model

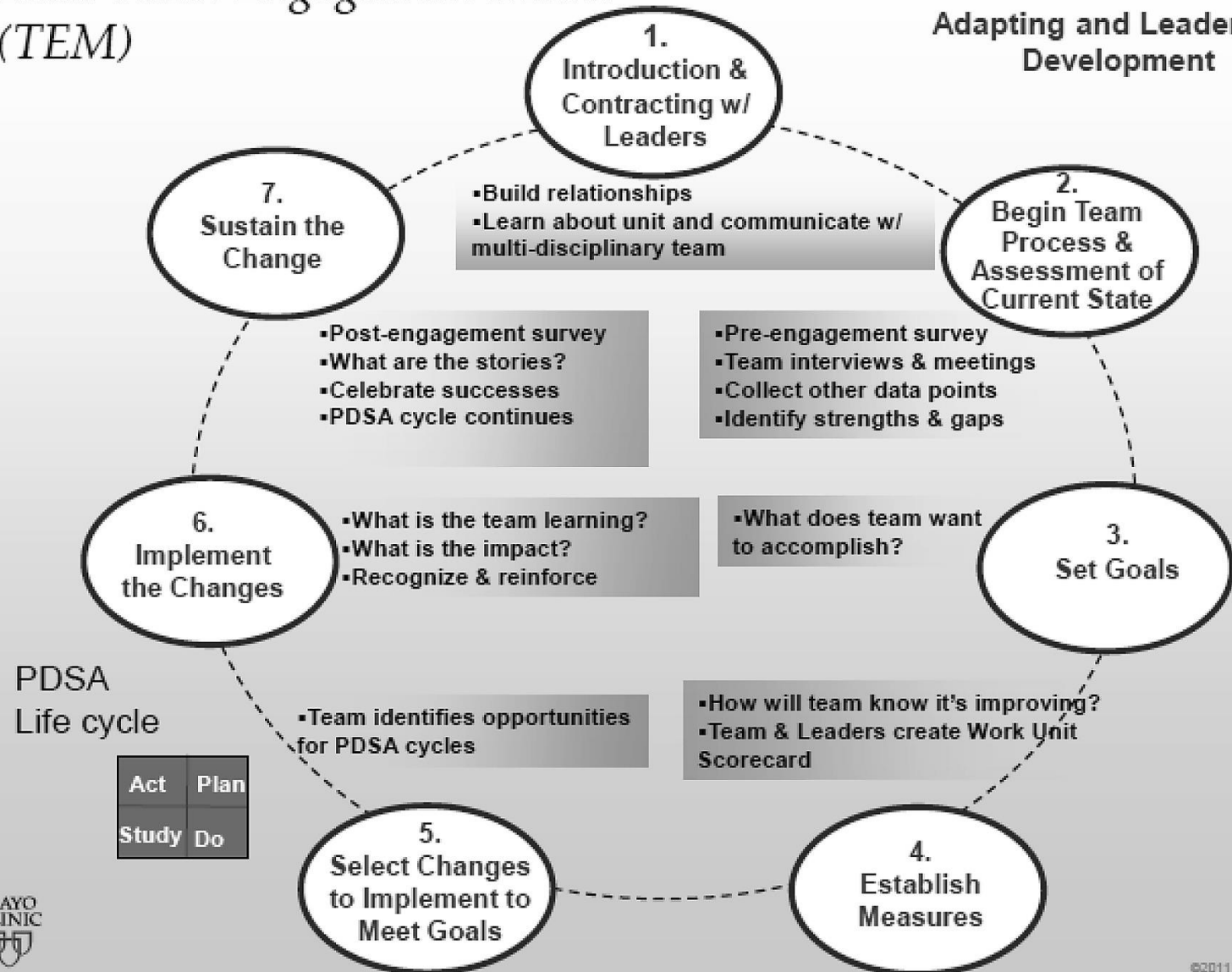


Summary of the work-flow/process model for delivering PRRT at our institution. The process was refined over many PDSA cycles.

PDSA –
“Plan, Do,
Study, Act”

Team-based Engagement Model (TEM)

Continuous Learning,
Adapting and Leadership
Development



ORIGINAL RESEARCH

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A Care Process Model to Deliver ^{177}Lu -Dotatate Peptide Receptor Radionuclide Therapy for Patients With Neuroendocrine Tumors

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PRRT – Patient Form

¹⁷⁷Lu-Dotatate Peptide Receptor Radionuclide Therapy (PRRT)

Last Name: _____ First Name: _____

Date of Birth: _____ Patient I.D. Number: _____

Primary Oncologist: _____

Insurance: _____

Diagnosis code: _____

Treatment Procedure Code: _____

AAA Portal: _____

Primary NET: _____

Date of diagnosis: _____

Date of Ga-68 Dotatate PET-CT or Octreoscan: _____

Date of last octreotide injection: _____

Record of PRRT Treatments

Frequency: every 8 weeks (4 treatments total)

1st cycle: _____

2nd cycle: _____

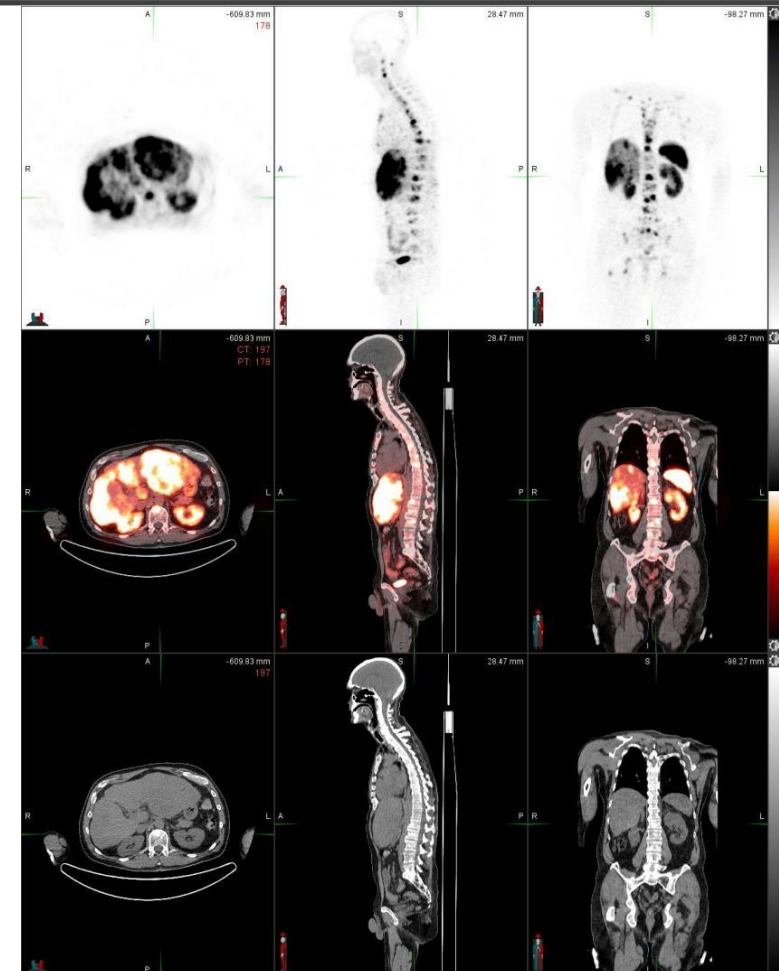
3rd cycle: _____

4th cycle: _____

1 / 48 (0.0°)

ateness – Pre-therapy Gallium-Dotatate Scan

1 / 48 (0.0°)



Process workflow - key elements



Patient Scheduling

- Patient identified – 4 weeks



- Review by Oncology
- Review by Nuclear Medicine



- Order supplies
- Amino acids
- Radiotherapy – 2 weeks

Process workflow - key elements



Appropriateness of therapy • Low Ki-67 •
High Ga68 PET-CT uptake



• Patient Safety Assessment • Labs



• Blood counts
• Renal
• Hepatic



• Pregnancy testing

Outpatient

or discharge

ff

Process workflow - key elements



Day Prior to Treatment

- Labs check – Physicians
- Dose check – Technologist
- Safety check – Radiation Safety Officer



- Communication is key (and documentation)
- NM – Oncology
- NM – Patient
- NM – Radiation Safety

Process workflow - key elements



- Patient check in – Oncology
- Start IV lines
- Precautionary/supportive medications



- Nausea
- Dose check – Nuclear Medicine
- Prep therapy cart
- Initiate Renal protective amino acid infusion



- Initiate Lu-177 infusion



- Remove all IV lines and Discharge



- Lanreotide/Octreotide Injection

Resources and challenges



Personnel



Consultations (nuclear medicine/nephrology)



Training



- Workload
- Regular floor nursing, low patient ratio



Emetogenic amino acid preparations vs. newer



Logistics (radiation/hotel stay/precautions)

