

Predictors Of Survival In 211 Patients With Stage IV Pulmonary And Gastroenteropancreatic Mibg Positive Neuroendocrine Tumors Treated With I-131 Mibg

Ari Kane MD, Matthew P. Thorpe MD, PhD, Michael A. Morse MD, Brandon A. Howard MD, Jorge D. Oldan MD, Jason Zhu MD, Terrence V Wong MD, Neil A. Petry PharmD, Robert Reiman Jr MD, Borges-Neto S. MD

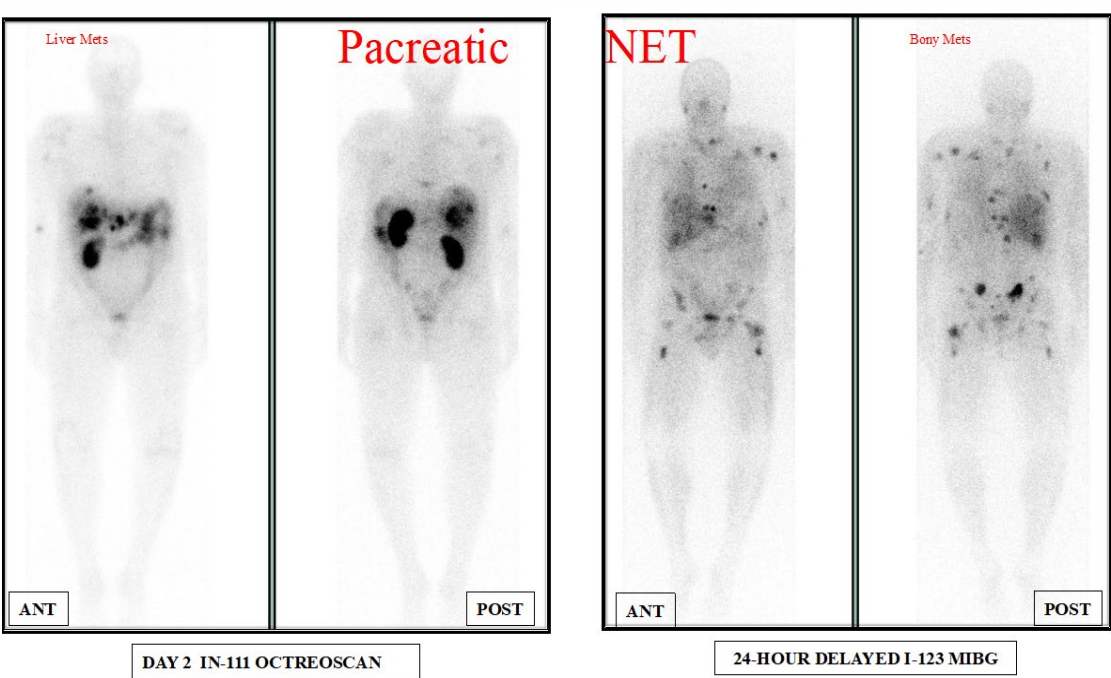
DUKE UNIVERSITY MEDICAL CENTER, DURHAM, NORTH CAROLINA, UNIVERSITY OF NORTH CAROLINA, CHAPEL HILL, NORTH CAROLINA

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BACKGROUND

- Radiopharmaceuticals have been widely used as diagnostic/therapeutics, most commonly in the form of peptide receptor of somatostatin.
- However, 10-20% of neuroendocrine tumors lack sufficient somatostatin receptor expression for PRRT.

In-111 OCTREOSCAN VS. I-123 MIBG



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- An alternative is Iodine-131-meta-iodobenzylguanidine (I-131-mIBG), radiolabeled norepinephrine analog that is taken up by chromaffin cells within neuroendocrine tumors.
- This retrospective analysis identifies predictors of survival in patients with mIBG positive stage IV pulmonary and gastroenteropancreatic (P/GEP-NET) treated with I-131 mIBG therapy, in order to inform treatment selection and post-treatment monitoring.

METHODS

- Survival, symptoms, imaging, and biochemical response were extracted via chart review from n=211 P/GEP-NET patients treated with mIBG between 1991-2014.
- For patients with computed tomography (CT) follow up (n=125), imaging response was assessed by Response Evaluation Criteria on Solid Tumors (RECIST) where images were available (n=76) or by chart review of the radiology report where images could not be reviewed (n=49).
- Kaplan Meier analysis and Cox multivariate regression estimated survival and progression free survival benefits predicted by initial imaging, biochemical and symptomatic response.

RESULTS

Table 1: Baseline characteristics

Variable	% of Patients
Gender	
Male	50
Female	50
Mean Age (SD)	59 (12)
Race	
Caucasian	86
African American	14
Treatment	
Single	81
Multiple	19
Two	15
Three	3
Four	1
Median Activity of mIBG (IQR)	18500 (11359-18870) MBq

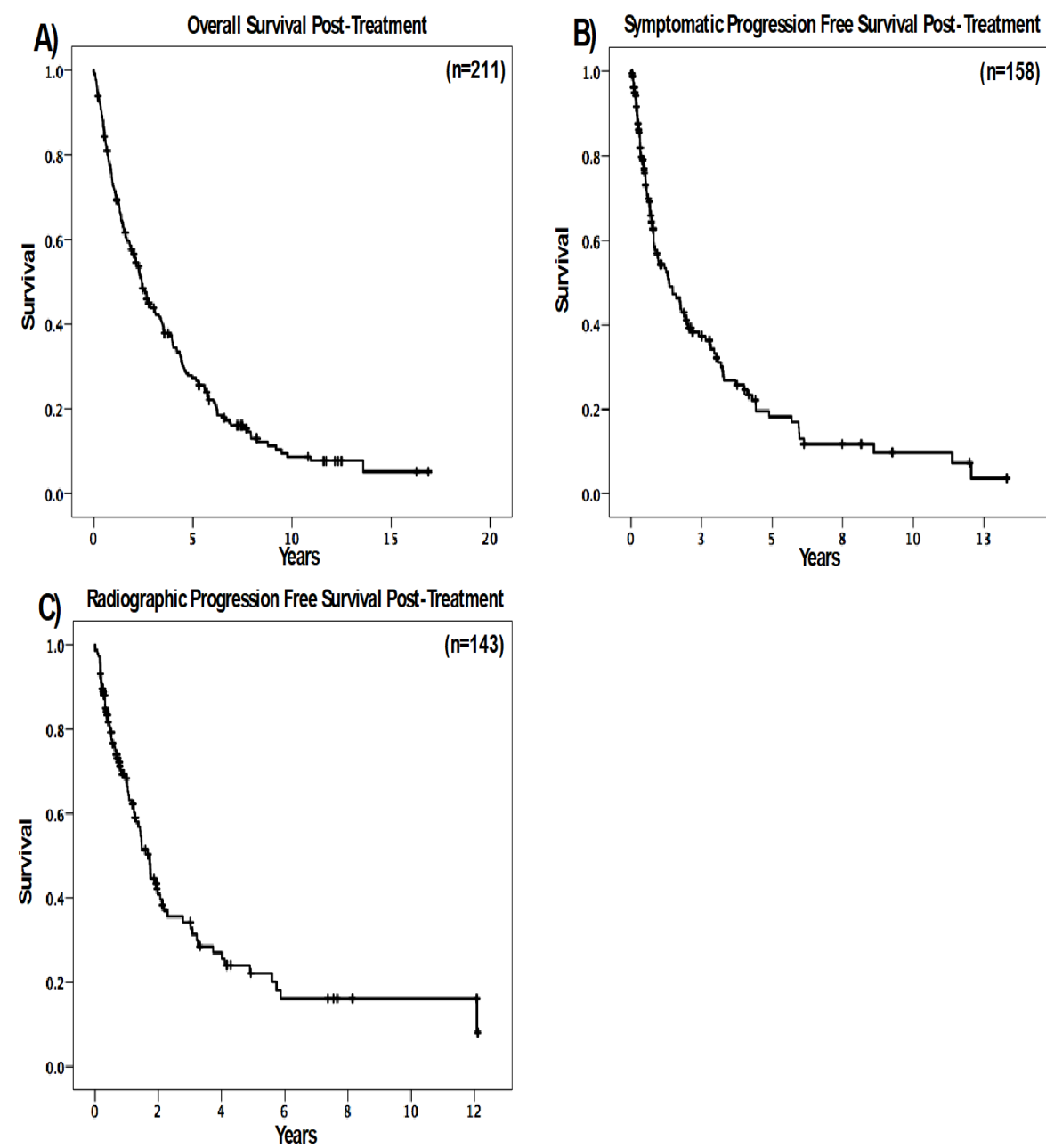
Table 2: Prior and post I-131 MIBG therapy

Prior Therapy	% of Patients	Post mIBG Therapy	% of Patients
Surgery	63	Chemotherapy	19
Radiation	10	Embolization	5
Embolization	6	mIBG	19
Chemotherapy	27	Surgery	3
Sandostatin	72	Radiation	4

Table 3: Summary of location of primary sites of disease, metastases

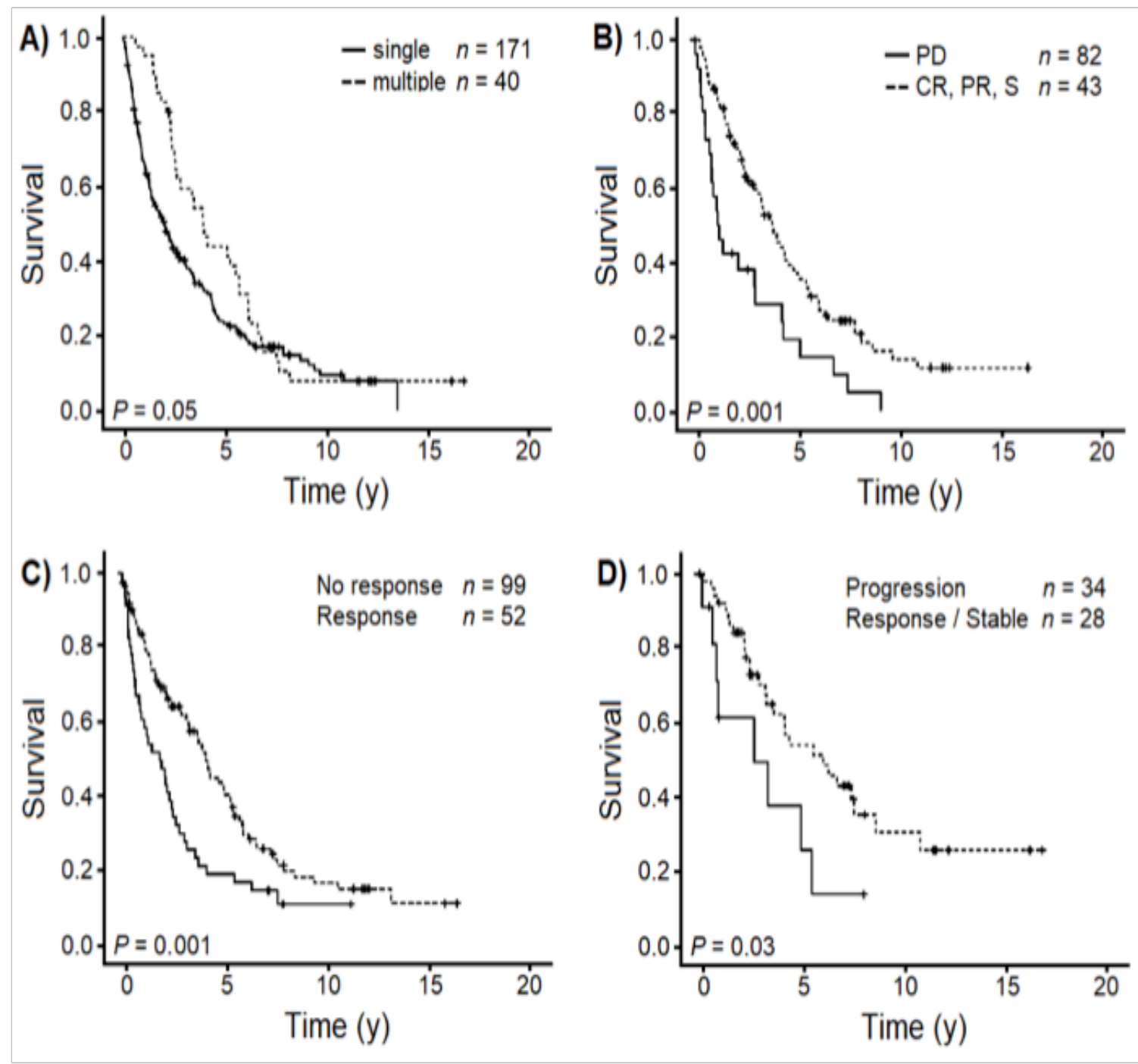
Location Primary	N (211)	Location Metastasis	N (211)
Unknown	83	Liver	183
Small bowel	67	Bone	41
Lung	22	Lungs	40
Colon	6	Carcinomatosis	29
Cecum	5	Mediastinum	17
Gastric	5	Mesentery	8
Rectal	5	Adnexa	6
Appendix	4	Pancreas	6
Pancreas	4	Adrenal	4
Mesentery	4	Kidney	3
Thymic	3	Skin	2
Cardiac	1	Bladder	1
Ovary	1	Gastric	1
Retroperitoneal	1	Gallbladder	1
		Muscle	1
		Orbit	1
		Spleen	1

Post MIBG Treatment Kaplan Meier Curves



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A) Overall Survival
B) Symptomatic Progression Free Survival
C) Radiographic Progression Free Survival by CT (125) or MIBG (18) Follow-up

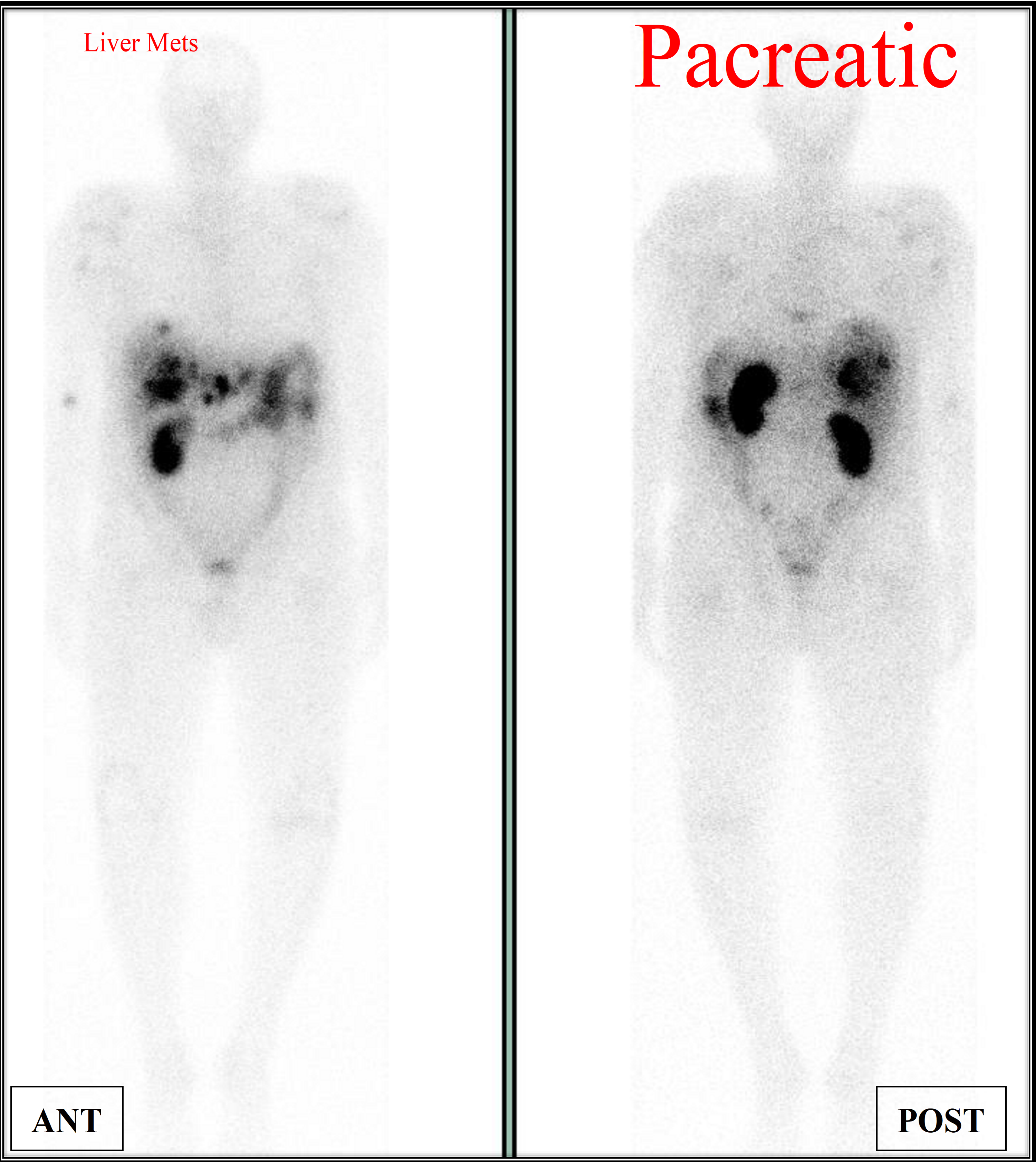
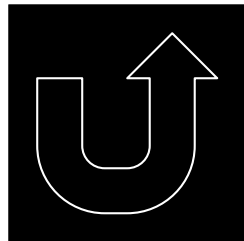


A) Single vs Multiple I-131 MIBG Treatments;
B) Imaging Demonstrating Complete Response (CR)/Partial Response (PR)/Stable (S) vs Progressive Disease (PD);
C) Symptomatic Response vs Non- Response or Worsening and Biochemical/Laboratory Response or Stability at Follow-up vs Progression.

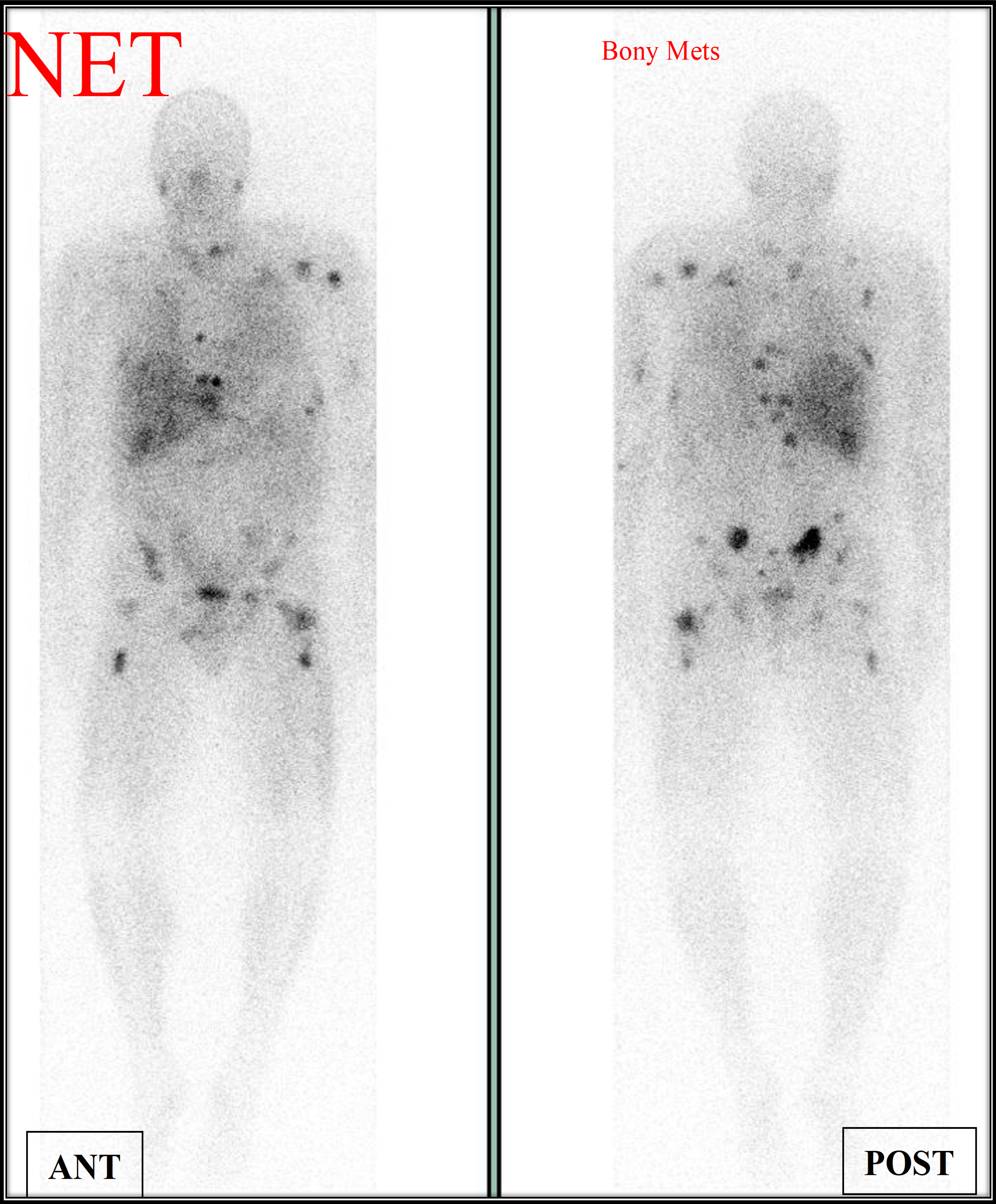
CONCLUSIONS

- I-131-mIBG for metastatic pulmonary and gastroenteropancreatic neuroendocrine tumors to be an effective means of symptom palliation with improved prognosis for those patients with symptomatic improvement, radiographic response or stability, and biochemical response or stability.
- This suggests that despite previous recommendations, regular imaging, biochemical assay, and clinical follow-up should be performed in patients with metastatic neuroendocrine tumors, particularly those undergoing I-131-mIBG treatment .
- Multiple mIBG treatments were also shown to result in improved survival, suggesting that patients might benefit from multiple rounds of treatment rather than a single treatment session; however, additional research is required to ensure that this association is not confounded by general patient wellness.

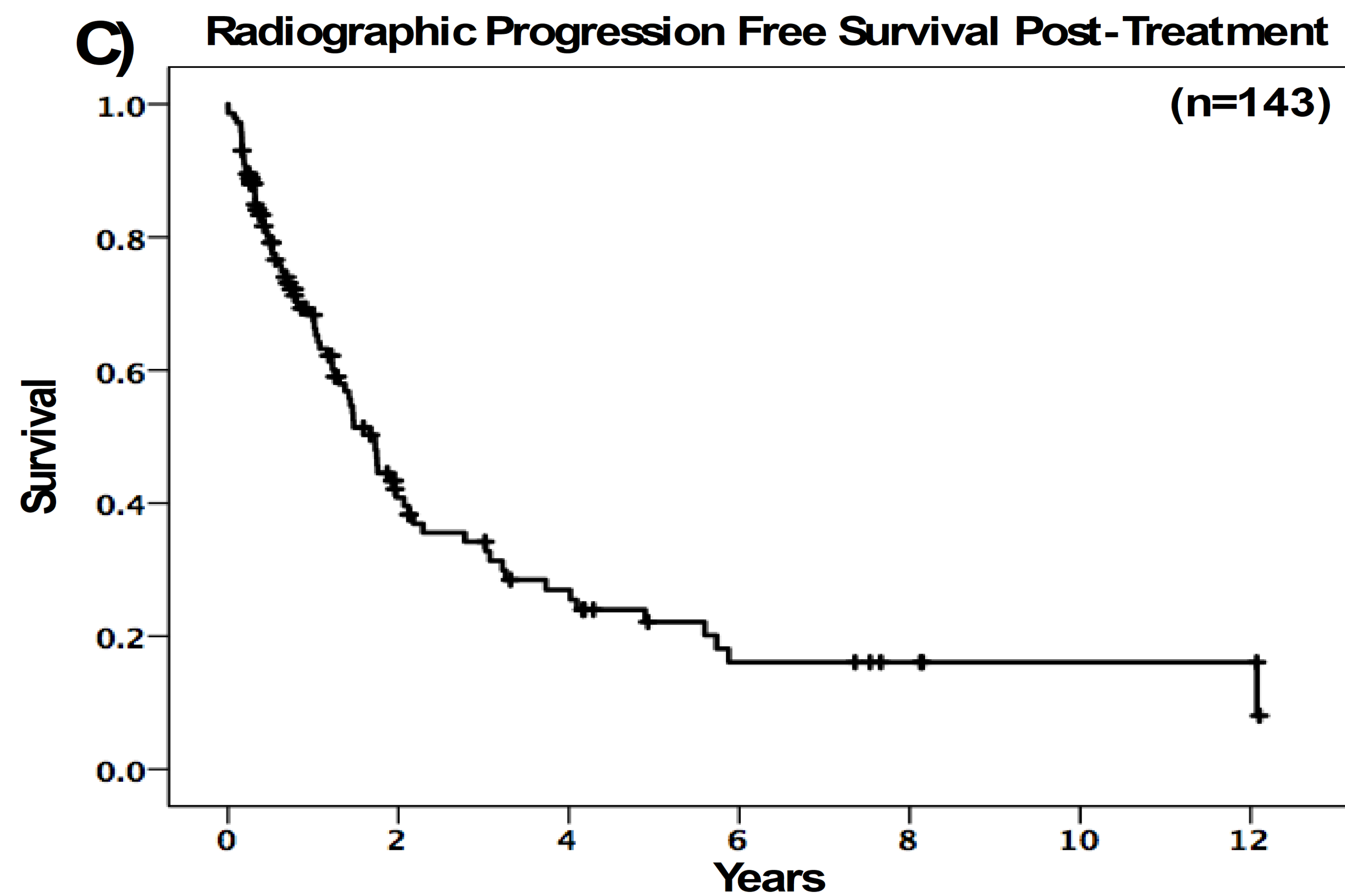
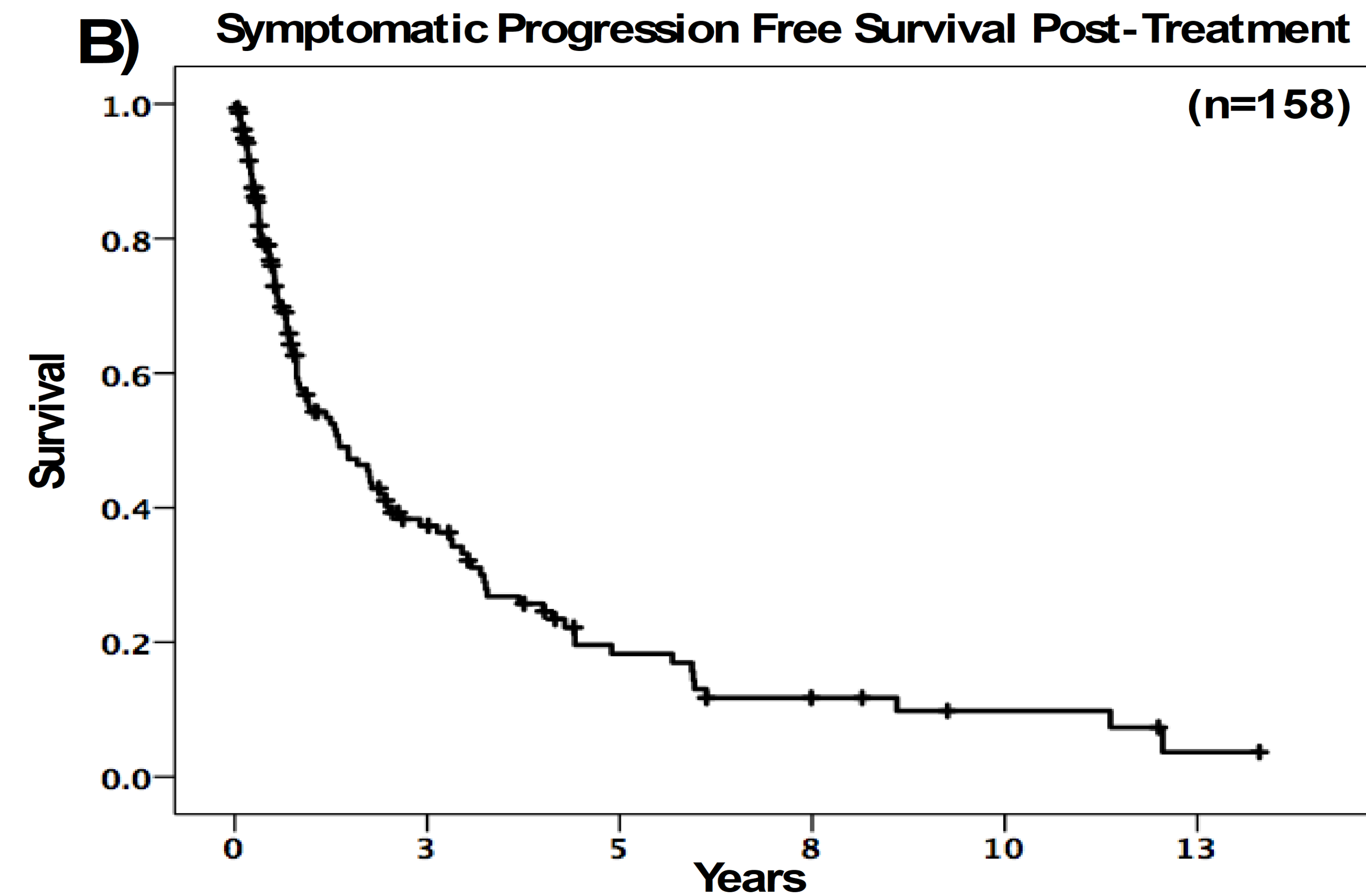
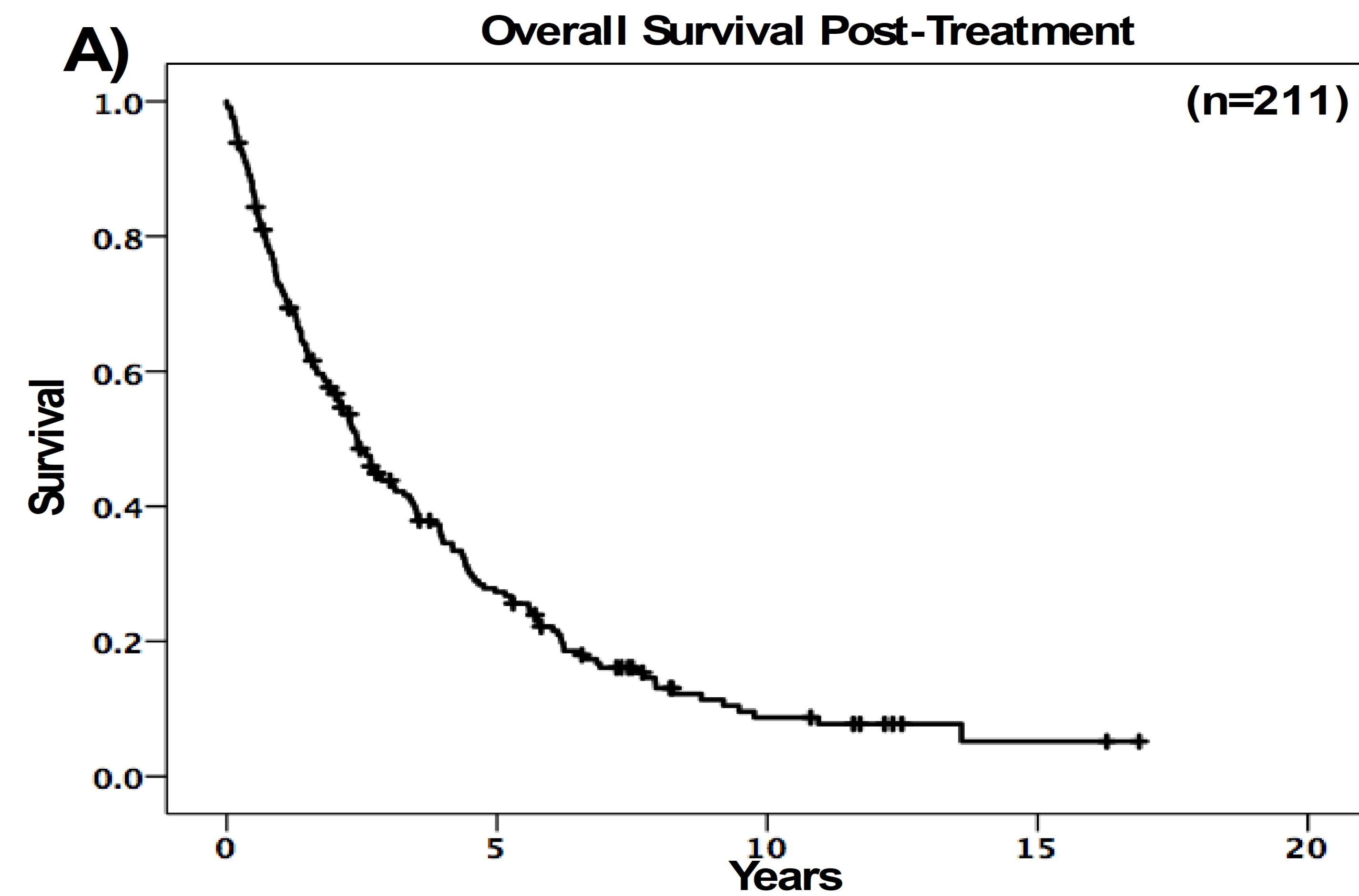
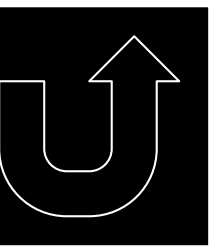
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DAY 2 IN-111 OCTREOSCAN



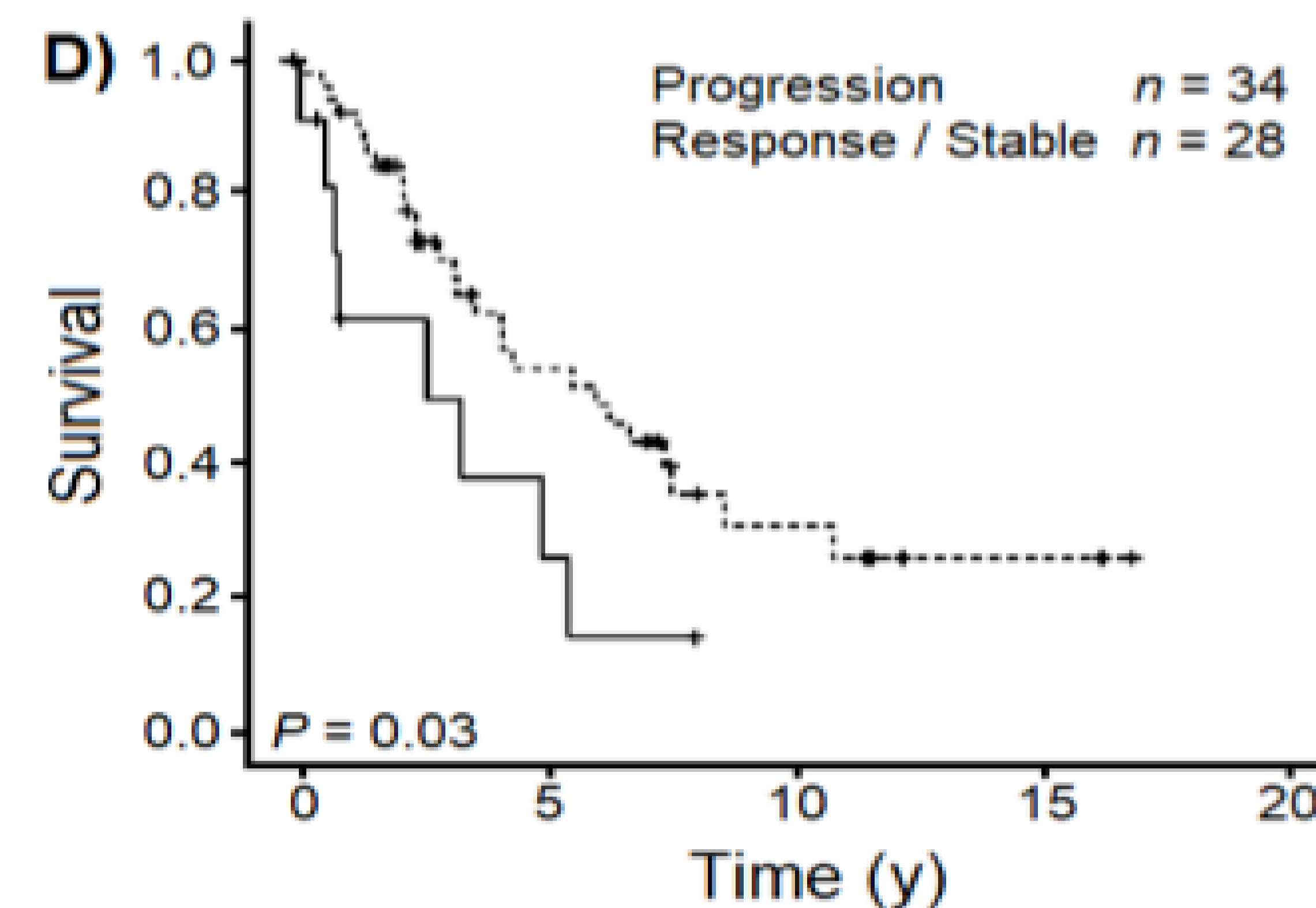
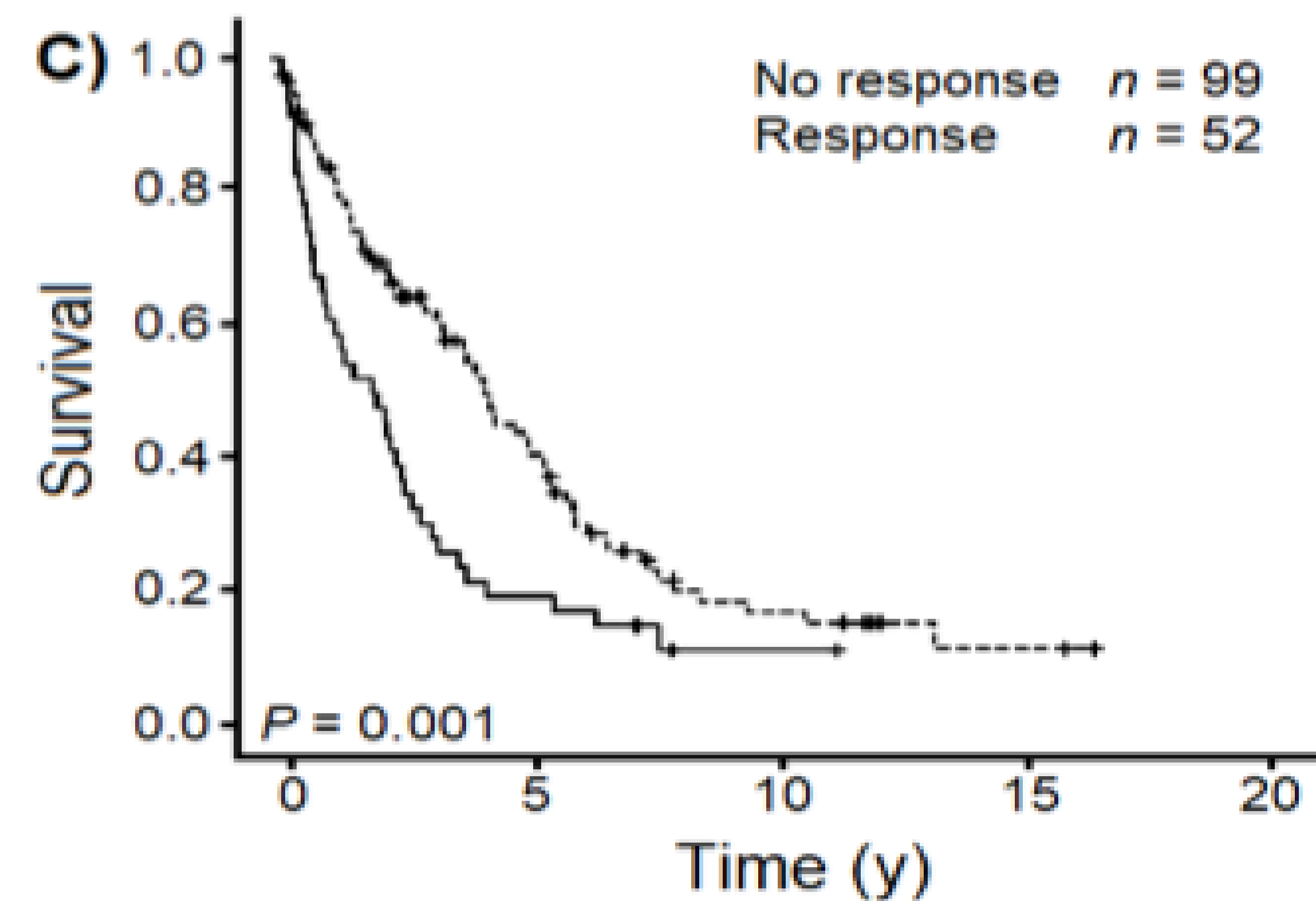
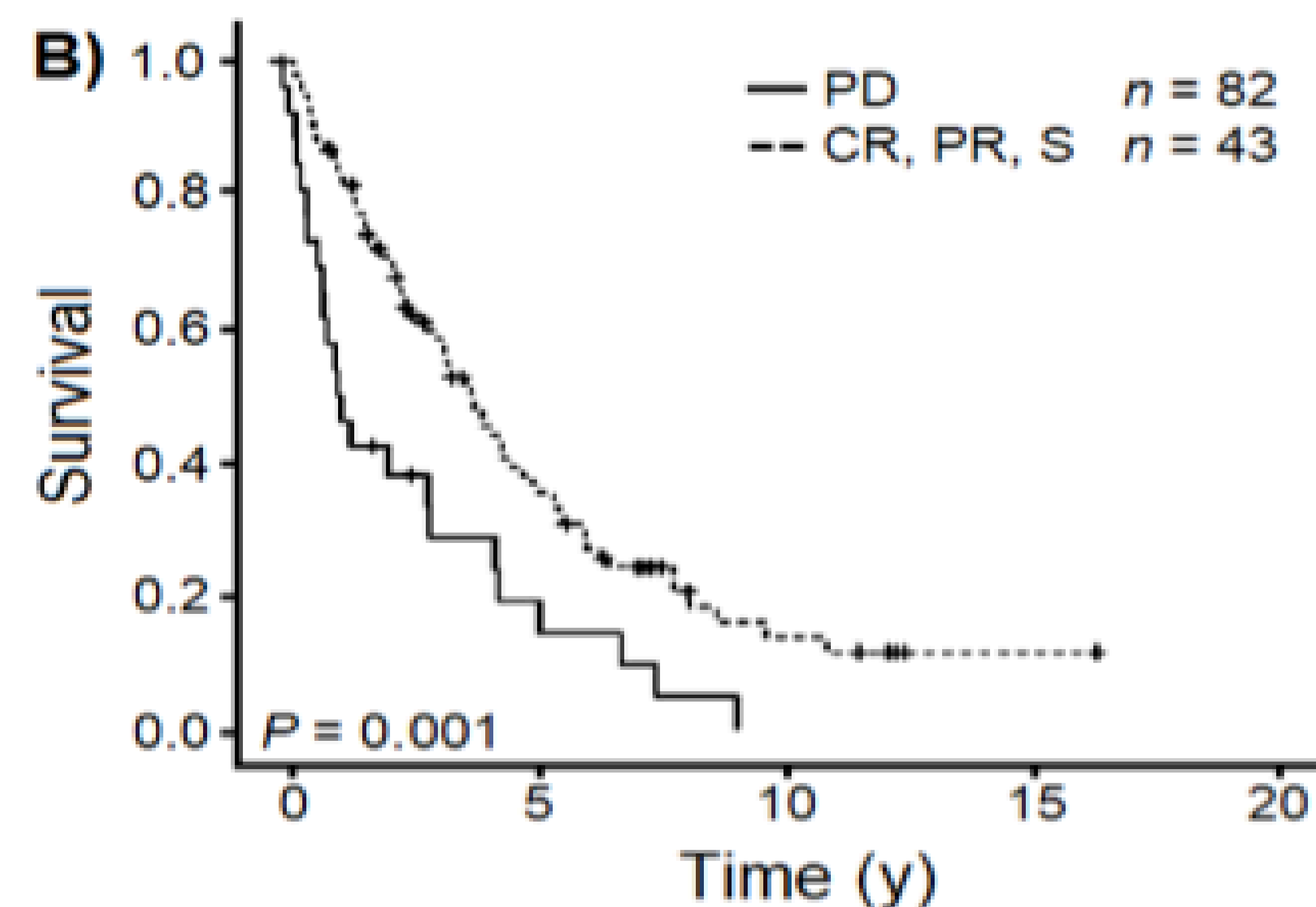
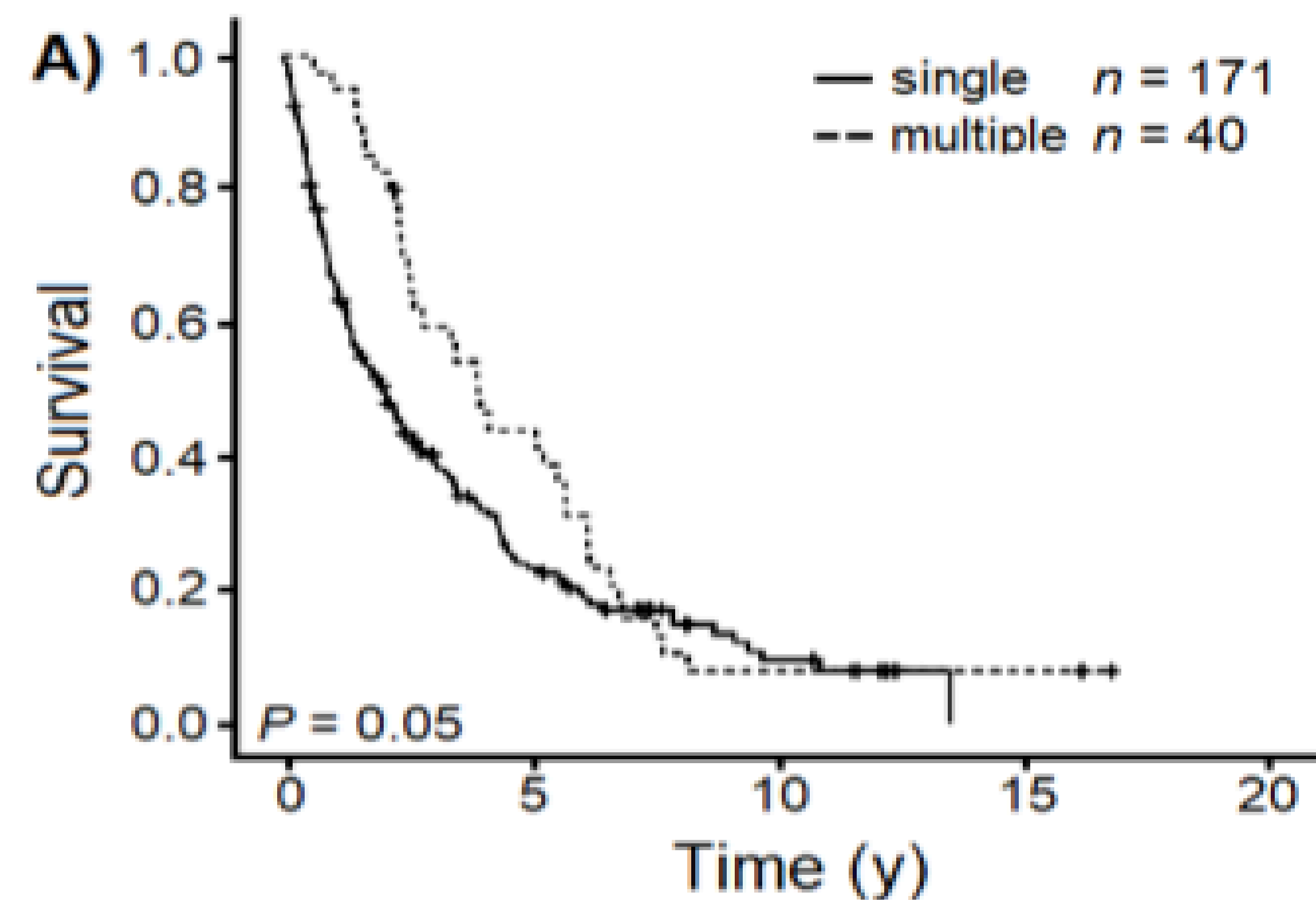
24-HOUR DELAYED I-123 MIBG



A) Overall Survival

B) Symptomatic Progression Free Survival

C) Radiographic Progression Free Survival by CT (125) or MIBG (18) Follow-up



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