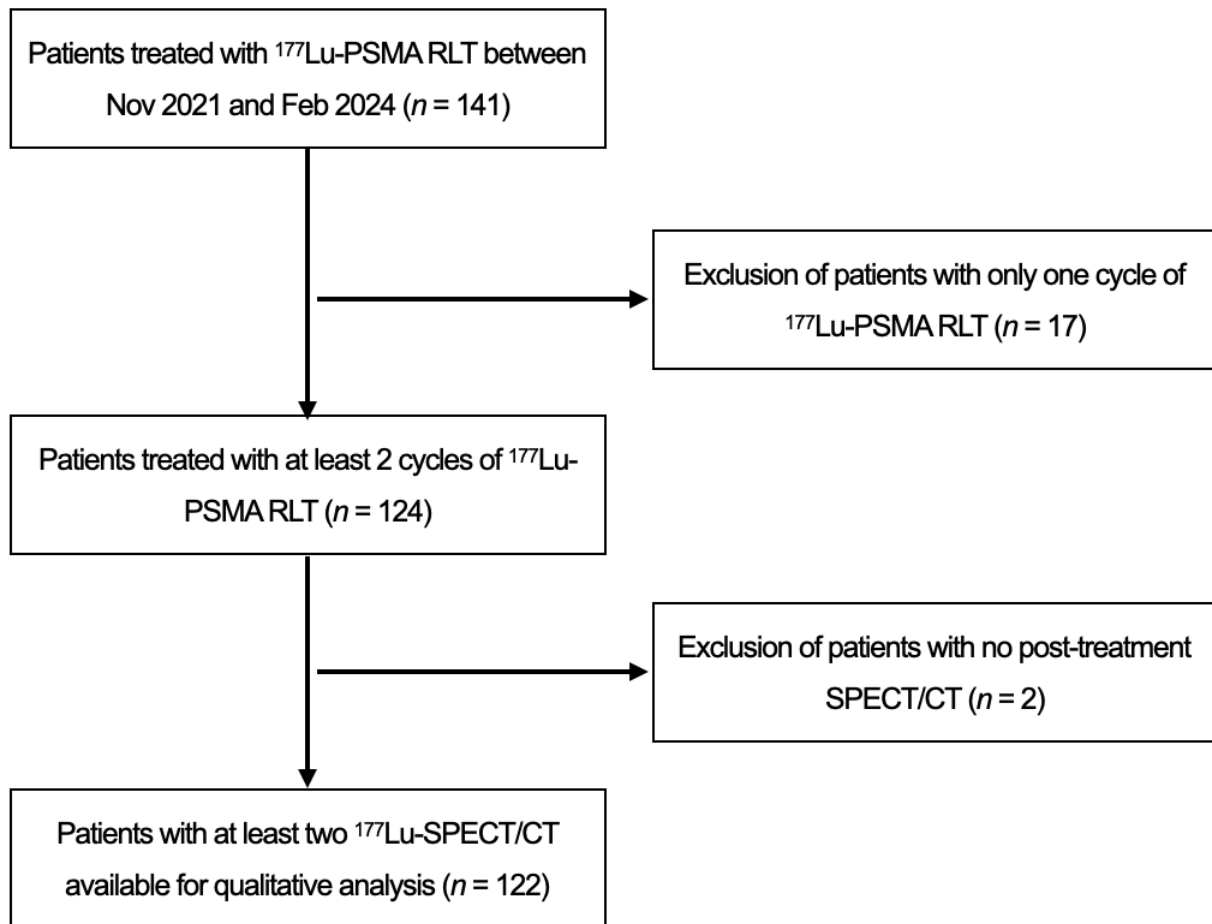
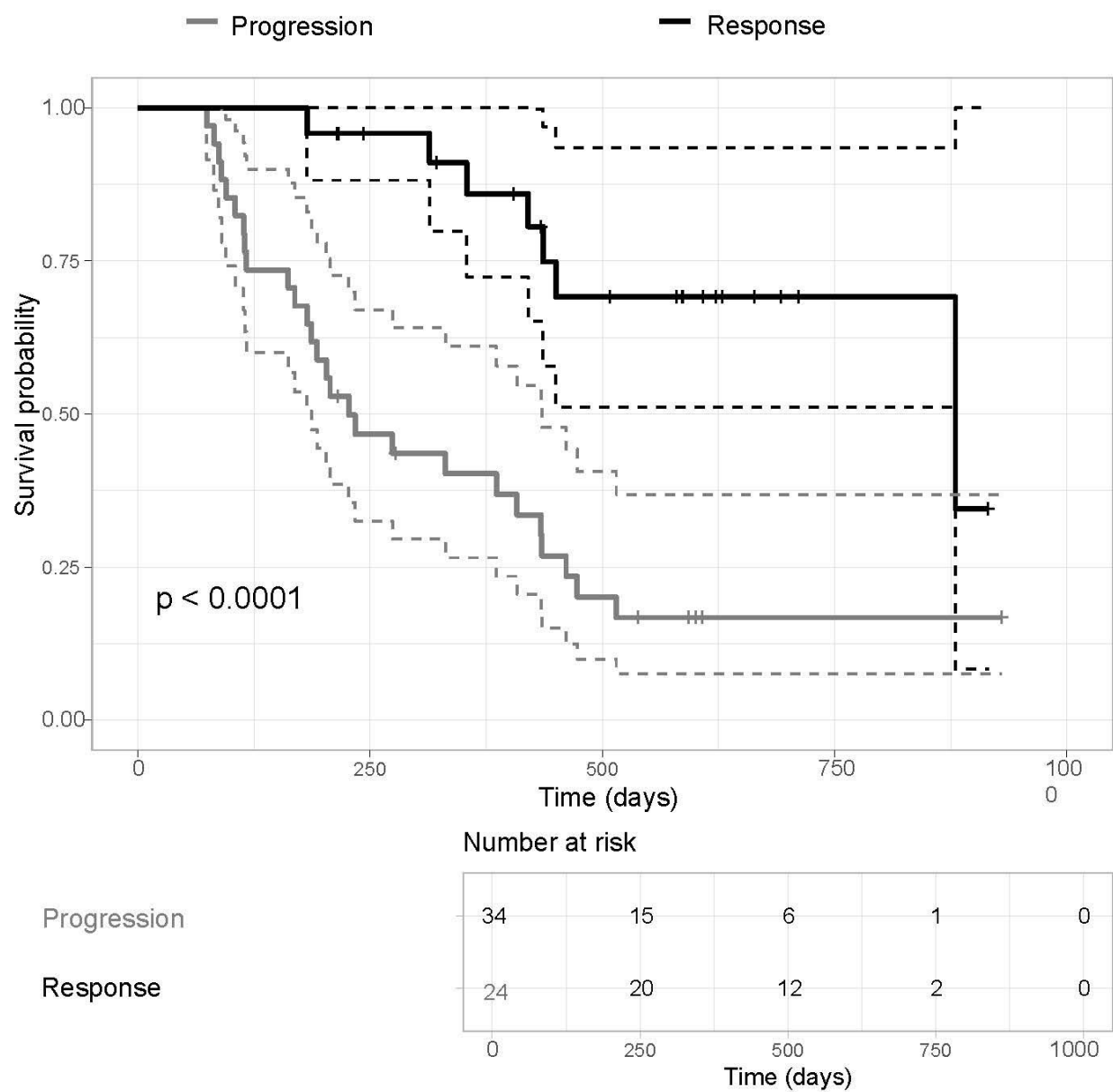


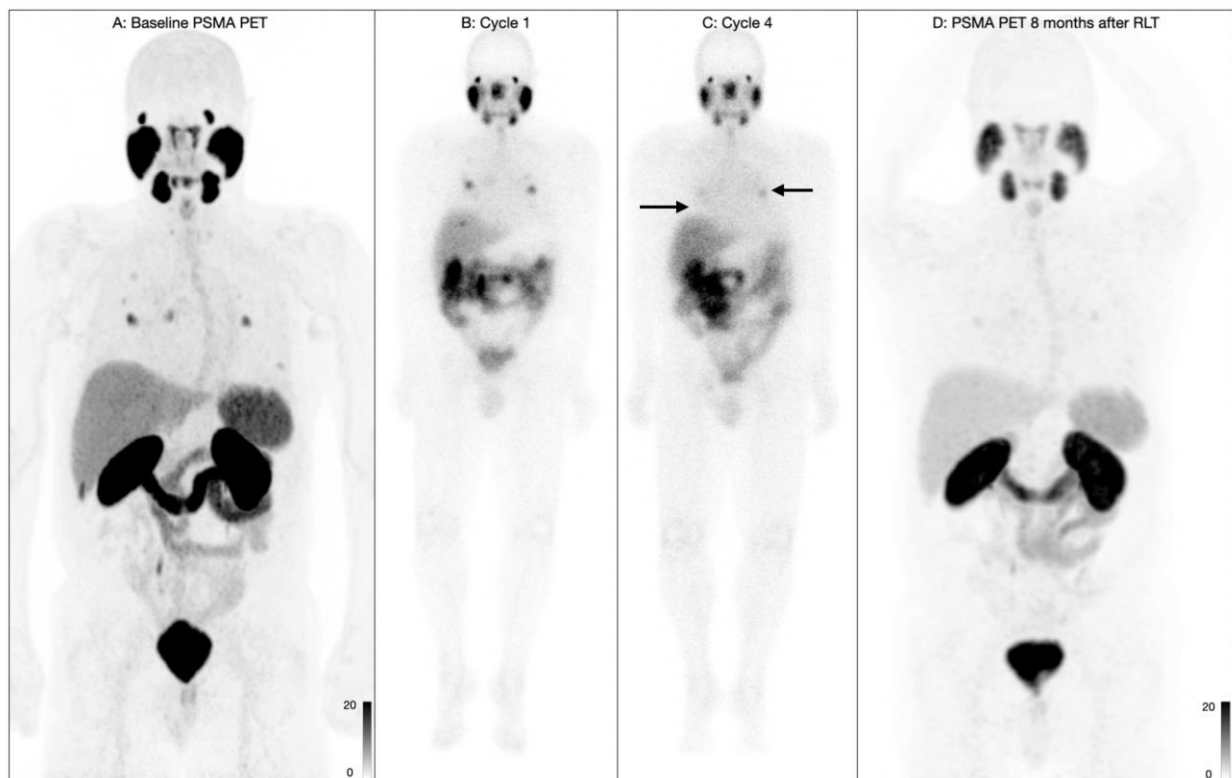
Supplemental Figure 1: Patient flow diagram



Supplemental Figure 2: Kaplan-Meier survival curves depicting outcomes for patients who stopped treatment early due to response on post-treatment SPECT/CT (black line) and those who stopped early due to progression (grey line).



Supplemental Figure 3: A 71-year-old man demonstrating a change in management due to response on post-treatment SPECT/CT in the setting of hematological toxicities. Pretreatment PSMA PET (A) and post cycle 1 images (B) demonstrate PSMA avid osseous and lung lesions. Post-cycle 4 planar imaging demonstrates reduction in previously visualized disease (C, black arrows). Further cycles were not administered due to imaging response in the setting of treatment related anemia and thrombocytopenia. Follow up PSMA PET (D) demonstrates no evidence of progression after 8 months after stopping PSMA RPT. Patient continues to be progression free on radiologic imaging after 17 months after initiating treatment. This patient was a non-PSA secretor highlighting the value of post-treatment SPECT in assessing response.



Supplemental Table 1: Correlation between PSA and post-treatment SPECT/CT for the five response groups: 1. PSA response after each cycle mirrored the corresponding post-treatment SPECT/CT response; 2. SPECT/CT showed stable disease while PSA fell; 3. SPECT/CT showed stable disease while PSA rose; 4. SPECT/CT showed progression and PSA declined; 5. SPECT/CT showed response while PSA rose. Outcomes demonstrating the median OS for these 5 groups are provided with 95% confidence intervals in brackets.

Group	<i>N</i>	Events	Median survival time (days)
1	54	30	408 [274, NA]
2	43	15	515 [435, NA]
3	31	15	429 [391, NA]
4	8	7	198 [187, NA]
5	7	5	391 [277, NA]