Scientific Publication Summary Clinical Genitourinary Cancer, July 2024

Assessing the heterogeneity of response of [^{68}Ga]Ga-PSMA-11 PET/CT lesions in patients with biochemical recurrence of prostate cancer

Mikaela Dell'Oro · Daniel Huff · Ojaswita Lokre · Jake Kendrick · Rajkumar Govindan · Jeremy Ong · Martin Ebert · Timothy G. Perk · Roslyn Francis. https://doi.org/10.1016/j.clgc.2024.102155

Key Takeaways:

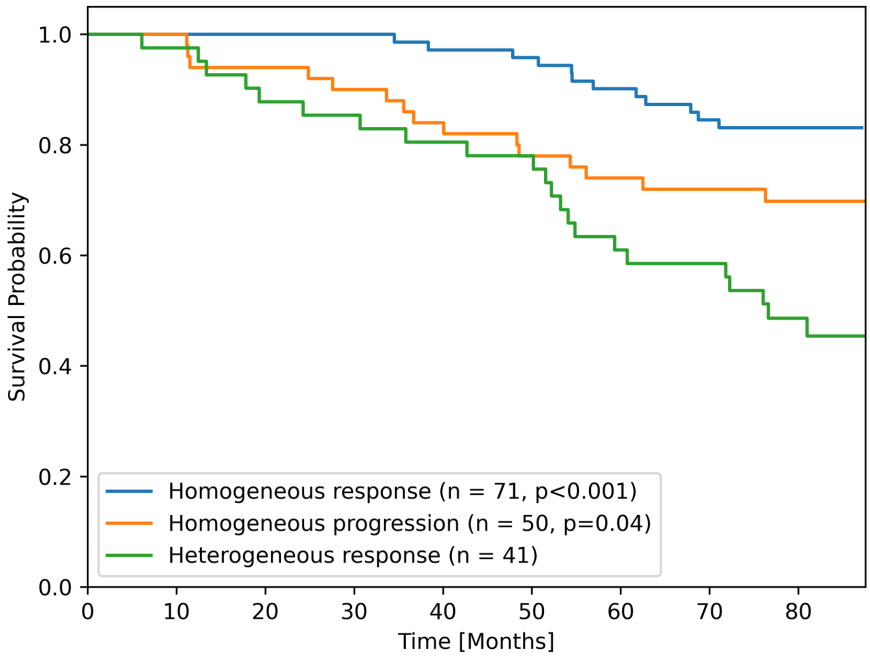
- patients with heterogeneous response had worse overall survival (OS) compared with patients with homogenous progression
- quantification of change in each lesion-ROI after just 6 months using augmentative software tools (e.g., TRAQinform IQ technology) can enhance the evaluation of treatment response from serial PSMA scans and facilitate lesion evaluation between timepoints

Study Aim: Assess the impact of quantitative imaging analysis (TRAQinform IQ technology) on the value of PSMA PET/CT to assess patient outcomes in response evaluation.

Population: 162 men with oligometastatic prostate cancer (PC) treated with standard clinical care and imaged with [^{68}Ga]Ga-PSMA-11 (PSMA) PET/CT at baseline and 6-month follow-up

Methods: TRAQinform IQ software (AIQ Solutions) was used for automated quantification and analysis of all lesion-ROI on each scan. Using Cox regression models, ROI-lesion size, intensity, extent, change, and heterogeneity of change among lesions were evaluated for association with overall survival (OS).

Subjects classified as having heterogeneous response demonstrated significantly shorter overall survival (OS) compared to subjects with homogeneous response ($p<0.001$) and compared to subjected with homogeneous progression ($p=0.04$).



Conclusions: This study demonstrates that a heterogeneous response at a lesional level may impact adversely on patient outcomes and supports further investigation to evaluate the role of imaging to guide individualized patient management to improve clinical outcomes.

Link to article: https://www.clinical-genitourinary-cancer.com/article/S1558-7673(24)00126-5/fulltext