



Comparison of ⁶⁸Ga-PSMA-11 PET/CT findings between different races in patients with low-risk prostate cancer

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Background

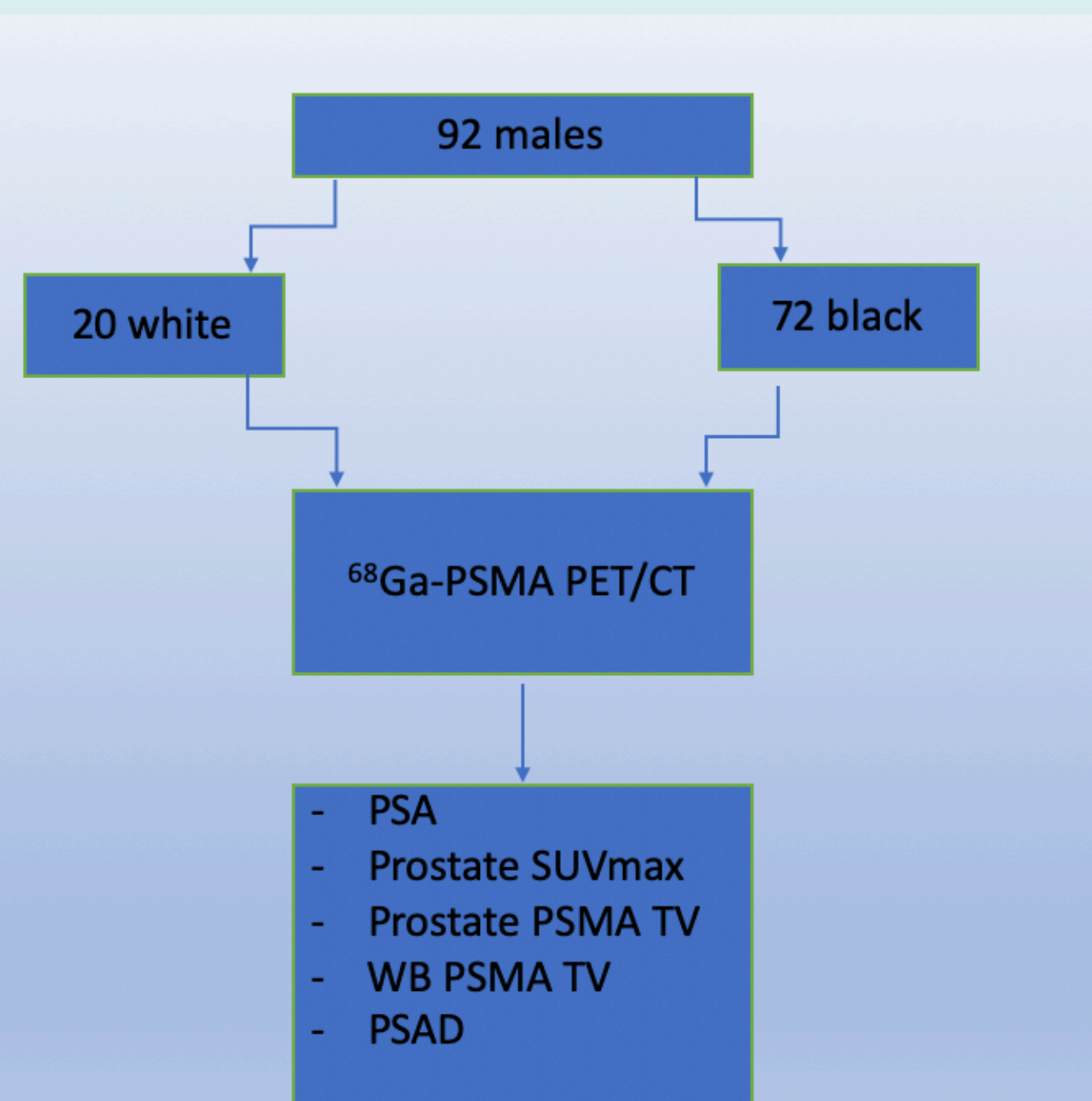
Prostate cancer (Pca) is a leading cause of mortality and morbidity. It has already been shown that black males with high-risk PCa have worse outcomes compared to white males, but it is not clear whether this would also be applicable to patients with low-risk disease.

Patients with low-risk disease have little potential for metastases on follow-up and there is no strong evidence for benefit of imaging patients with low- and intermediate-risk disease. ⁶⁸Ga-PSMA PET/CT imaging for metastatic PCa has superior accuracy over conventional imaging in staging high-risk PCa patients. In view of the more aggressive nature in black males, metastases may occur early even in low-risk groups and imaging may therefore be appropriate in that setting.

Aim

To evaluate the value of ⁶⁸Ga-PSMA PET/CT in black and white males with Gleason 3+3 and 3+4 PCa at initial staging

Methods

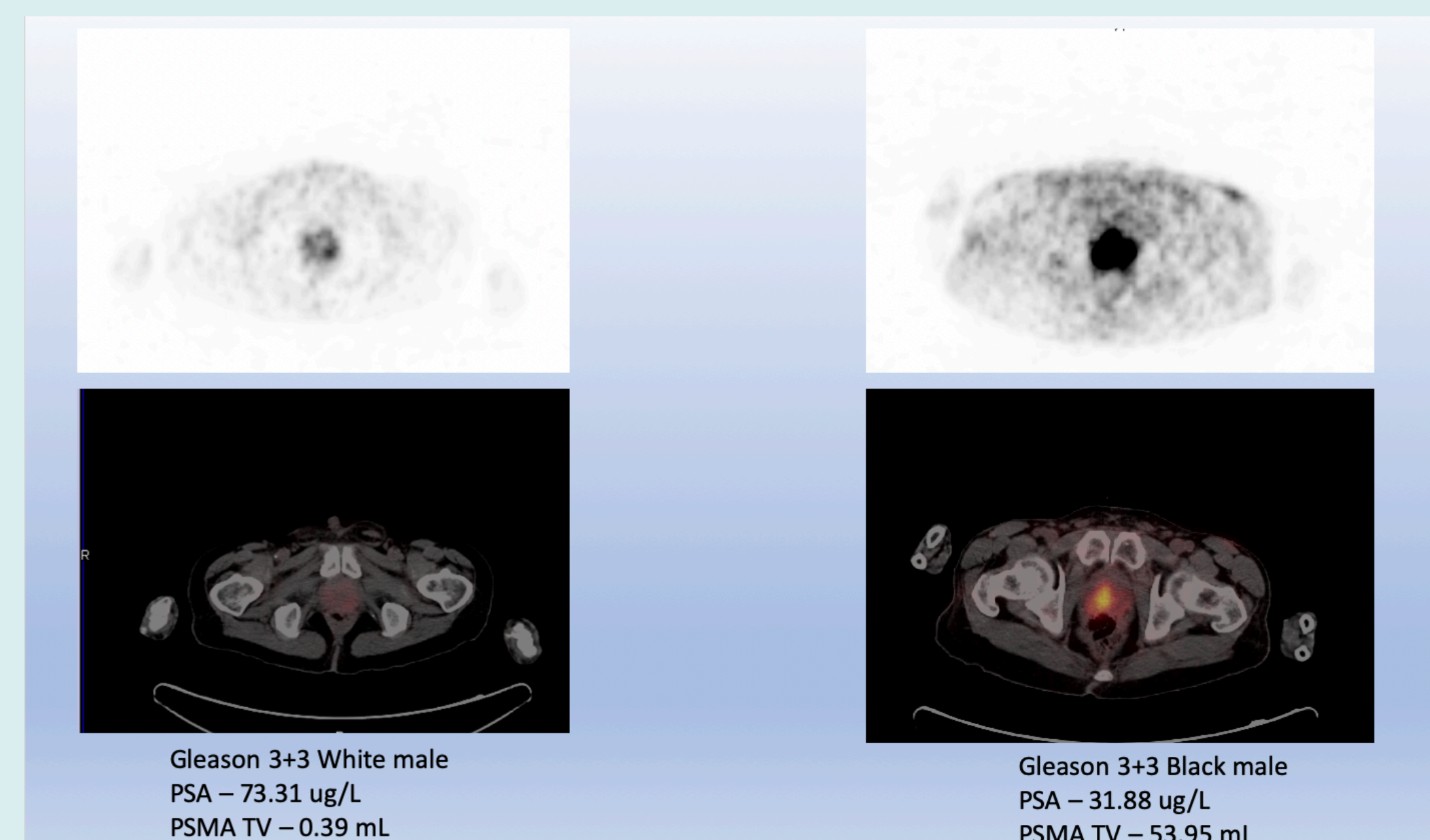


92 treatment-naïve males (20 Caucasian and 72 black) with low-risk prostate cancer (Gleason 3+3 and 3+4) were imaged with ⁶⁸Ga-PSMA PET/CT.

The following measurements were determined and analysed: Prostate SUVmax, prostate PSMA-TV, whole-body PSMA-TV and PSA-density (PSAD) and s-PSA.

Results

	Black	White	
Parameters	n (%)	n (%)	p value
PSA (ug/l)	50.35(21.50–134.25)	20.00(6.48–36.42)	<0.001
PSMA-TV prostate	28.85(8.63–44.29)	6.00(0.81–14.74)	0.001
Prostate SUV max	9.92(6.40–21.13)	5.95(3.49–9.49)	0.001
Whole body PSMA TV	31.34 (8.80 – 50.52)	6.93 (0.81 – 17.42)	0.005



No significant age difference was noted between the two groups. ⁶⁸Ga-PSMA PET/CT demonstrated increased prostatic PSMA expression in all but 2 black and 2 white males. 24% black and 20% white males presented with metastatic disease.

Statistically significant higher mean PSA, prostate SUVmax, prostate PSMA-TV and whole-body PSMA-TV was noted in black as compared to white males. No statistically significant difference was noted in PSA density. Positive correlation was noted between PSA and presence of metastases.

Discussion

- Black males have higher PSMA expression
- PSMA expression is associated with higher grade tumor
- Disparities may be due to health care access, SES, higher grade histology & genetic factors
- Limitation:
 - Small sample size of white males

Conclusions

Higher PSMA expression is seen in the primary tumor of black males with histologically low risk prostate cancer when compared to their white counterparts.

These patients are also likely to have higher tumor volume at initial staging.

References

1. Hofman, MS. et. al Lancet (2020)
2. Seifert, R. et al. Eur J Nucl Med Mol Imaging (2020).
3. Zou, Q. et al. Abdom Radiol (2020)

Disclosures

The authors have no disclosures to declare