

# COMPARISON OF SUVMAX VALUES IN PATIENTS WITH PRIMARY AND RECURRENT PROSTATE CANCER ON PET/CT

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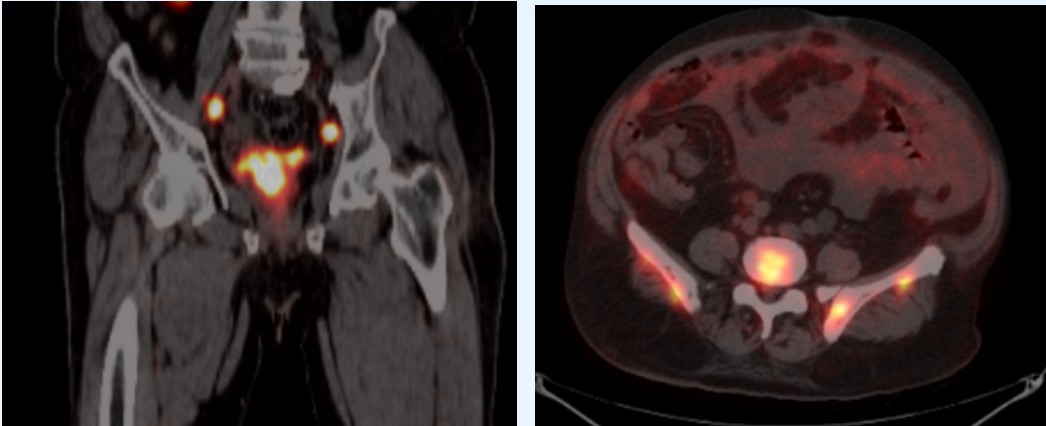
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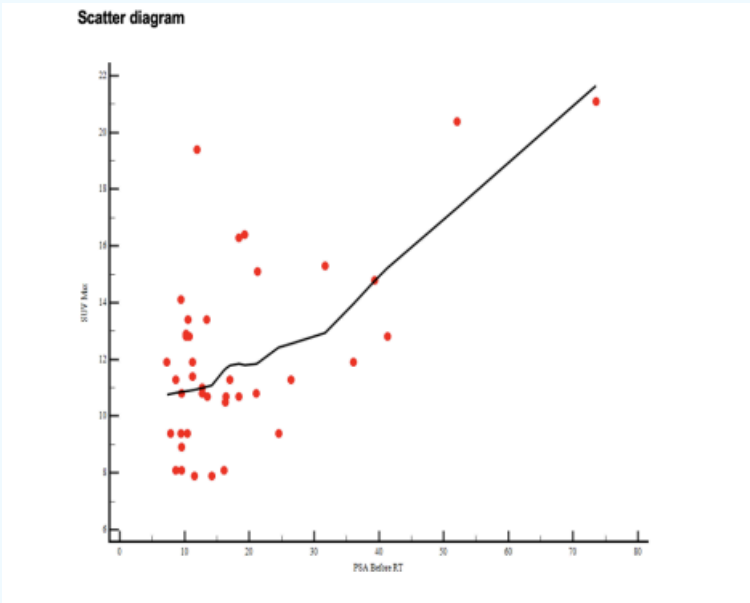
## BACKGROUND:

Globally, prostate cancer is the second most commonly diagnosed cancer and a leading cause of cancer death in men including Pakistan.. Diagnostic evaluation typically involves PSA testing, mpMRI, and advanced imaging techniques. Among these, <sup>68</sup>Ga-PSMA-11 PET/CT has emerged to be highly effective for detecting, staging, and guiding treatment planning by measuring tumor metabolic activity through SUV-based measurments.

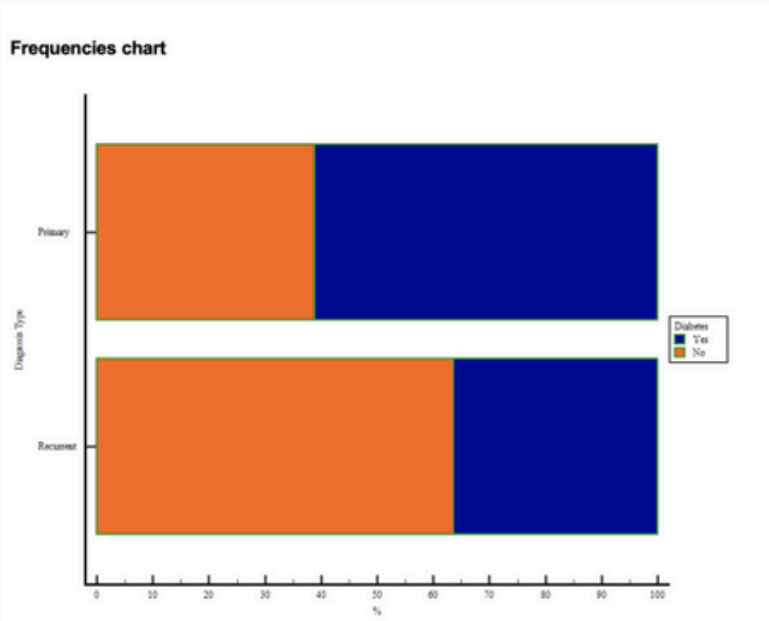


## MATERIAL:

- This was a cross-sectional study that was conducted over a period of 9 months.
- A purposive sampling technique was employed to recruit male patients aged 40–70 years with histologically confirmed primary prostate cancer who had undergone <sup>68</sup>Ga PSMA-11 PET/CT imaging as part of their radiotherapy planning.
- Patients with prior prostate cancer treatment or other malignancies were excluded from the study.



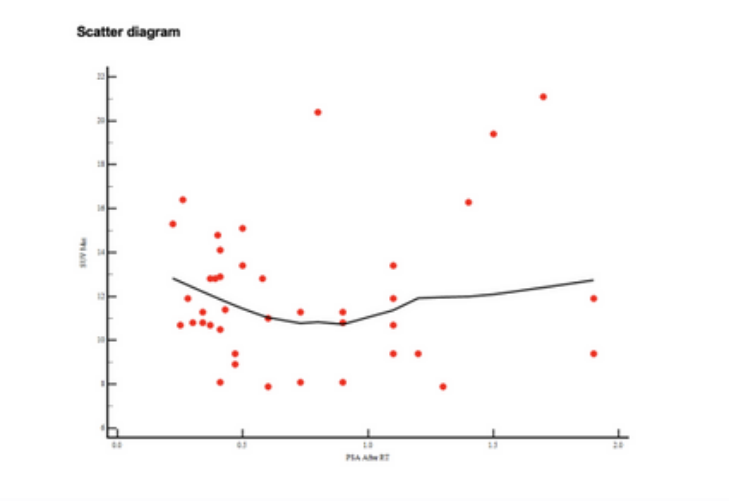
SUV Max shows a positive correlation with PSA levels before RT, with higher PSA associated with higher SUV Max.



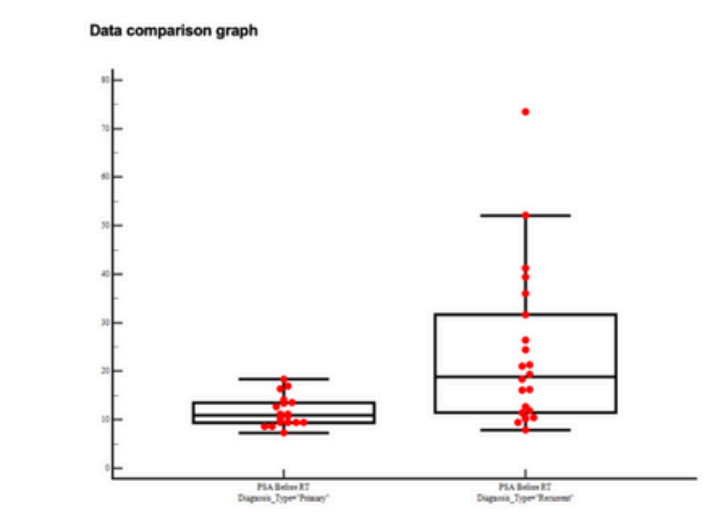
A higher proportion of recurrent cases have diabetes compared to primary cases, where non-diabetic individuals are more common.

## RESULTS:

The study found a significant positive correlation between intraprostatic SUVmax values and pre-radiotherapy PSA levels ( $r = 0.642$ ,  $p = 0.024$ ), suggesting a higher PSA is associated with greater tracer uptake on <sup>68</sup>Ga PSMA-11 PET/CT. SUVmax values were significantly higher in recurrent disease compared to primary prostate cancer (mean = 17.5 vs. 10.8,  $p = 0.031$ ). A positive association was recorded between SUVmax and Gleason score( $r = 0.2418$ ,  $p = 0.132$ ). However, a non significant association was observed between SUVmax values and post-radiotherapy PSA levels (( $r = -0.1404$ ,  $p = 0.3876$ ).



SUV Max does not show a consistent correlation with PSA after RT, remaining scattered with only minimal variation.



Pre-radiotherapy PSA values are markedly higher in recurrent cases compared to primary cases.

## CONCLUSION:

This study supports the use of SUVmax from PSMA PET//CT as a valuable tool for the assessment of tumor burden especially in pre-treatment settings. A significant correlation was found between SUVmax and pre-treatment PSA levels, especially in recurrent cases, while no significant associations were observed with Gleason score and post treatment PSA.

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