

## Supplementary Data

### Cutoff values for kinetic PSA values

The area under the receiver operating characteristic (ROC) curve was 0.659 (95% CI 0.6-0.7;  $p < 0.0001$ ) for the PSA value at the time of PET/CT, 0.622 (95% CI 0.6-0.7;  $p = 0.049$ ) for PSA<sub>dt</sub>, and 0.693 (95% CI 0.6-0.7;  $p < 0.0001$ ) for PSA<sub>vel</sub>.

The optimal cutoff values to differentiate a positive or negative PET-PSMA result were 0.5 ng/mL for the PSA value at the time of PET/CT, 4 months for PSA<sub>dt</sub>, and 0.4 ng/mL/year for PSA<sub>vel</sub>.

The 68Ga-PSMA-11 PET/CT was positive in 36.2% of patients who had a PSA value  $< 0.5$  ng/mL at the time of PET/CT compared to 60.8% in patients who had a PSA value  $\geq 0.5$  ng/mL at the time of PET/CT ( $p < 0.001$ ).

The 68Ga-PSMA-11 PET/CT was positive in 49.8% of patients who had a PSA<sub>dt</sub>  $> 4$  months, compared to 66.4% in patients with a PSA<sub>dt</sub>  $\leq 4$  months ( $p = 0.002$ ).

The 68Ga-PSMA-11 PET/CT was positive in 37.6% of patients with a PSA<sub>vel</sub>  $< 0.4$  ng/mL/year, compared to 61% in patients with a PSA<sub>vel</sub>  $\geq 0.19$  ng/mL/year ( $p < 0.001$ ).