

Effects of Echo Time on IVIM Quantification of the Normal Prostate

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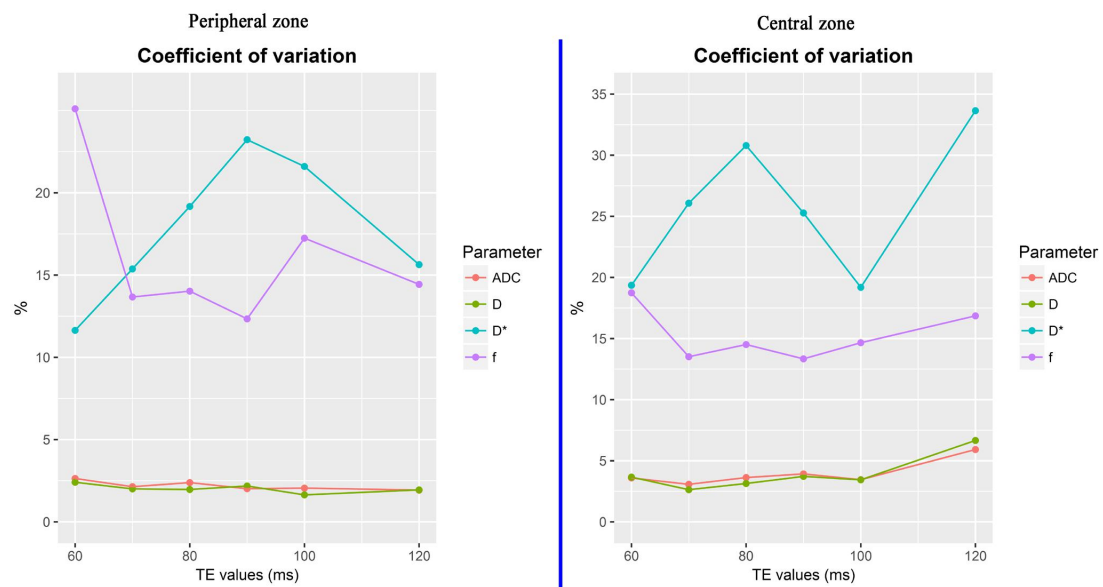


Figure S1. Mean coefficient of variation (CV, in %) for the ADC, D, D* and f from ROI analysis of 17 healthy volunteers in the peripheral zone and central zone. With TE values in the range of 60-120 ms, the CV of the ADC, D, D* and f

values in the peripheral zone were in the range of 1.928%-2.635%, 1.641%-2.407%, 11.640%-23.230%, 12.337%-25.108%; the CV of the ADC, D, D* and f values in the central zone were in the range of 3.070%-5.918%, 2.632%-6.661%, 19.189%-33.644%, 13.338%-18.741%.

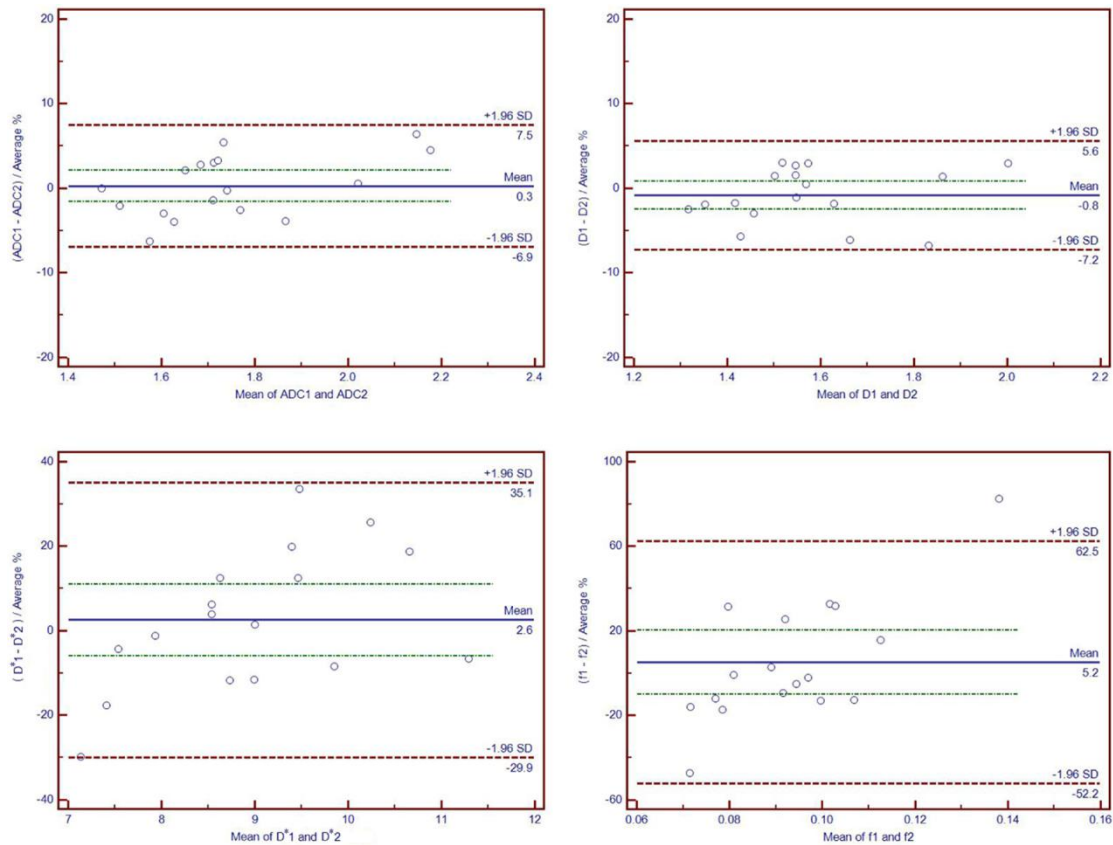


Figure S2. Bland-Altman plots of reproducibility of ADC, D, D* and f for the prostate peripheral zone. Bland-Altman plots of mean of differences of ADC, D, D* and f (Y-axis) against mean ADC, D, D* and f (X-axis) of the first and second DWI series examination (TE = 60 ms), with mean difference (blue dashed line) and 95% confidence interval of the mean difference (limits of agreement) (red dashed lines). The data unit of the X-axis is $10^{-3} \text{ mm}^2/\text{s}$ for ADC, D, and D*; f has no units.

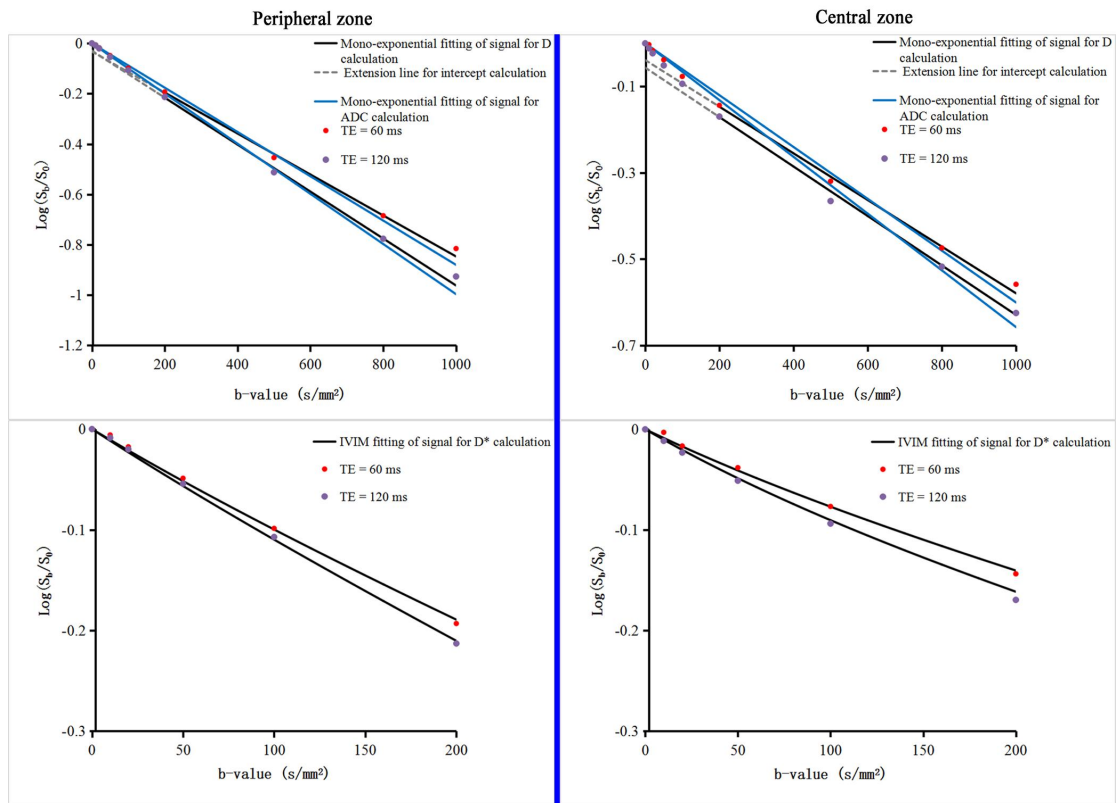


Figure S3. The measured DWI signals and fitting curves of the normal prostate.

The ADC was calculated from all the b values (0-1000 s/mm²) using the mono-exponential equation $S_b = S_0 \times \exp(-b \times \text{ADC})$. The diffusion coefficient (D) and S_0' were calculated using the mono-exponential equation $S_b = S_0' \exp(-b \times D)$. S_b is the signal intensity with the gradient, and S_0' is the b=0 intercept of the mono-exponential fit of high b value data (≥ 200 s/mm²). The perfusion fraction (f) was calculated by $f = (1 - S_0')/S_0$. At last, the calculated D and f were applied in the IVIM equation fit of all b values (0-200 s/mm²) to measure D*. The ADC, D, D* and f were 2.027×10^{-3} mm²/s, 1.875×10^{-3} mm²/s, 10.334×10^{-3} mm²/s, 0.072 (TE =60 ms); 2.295×10^{-3} mm²/s, 2.148×10^{-3} mm²/s, 10.656×10^{-3} mm²/s, 0.065 (TE=120 ms) in the peripheral zone. The ADC, D, D* and f were 1.383×10^{-3} mm²/s, 1.245×10^{-3} mm²/s, 10.473×10^{-3} mm²/s, 0.085 (TE=60 ms); 1.514×10^{-3} mm²/s, 1.320×10^{-3} mm²/s, 10.566×10^{-3} mm²/s, 0.121 (TE=120 ms) in the central zone.