

1014 Assessment of Prostate Gland Volume Estimations Using MRI And TRUS Compared to Radical Prostatectomy Specimens

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Introduction: The prostate volume is an essential criterion to calculate prostate specific antigen density (PSAD). When selecting patients for active surveillance (AS), in newly diagnosed low risk prostate cancer group or continuing AS in previously diagnosed cancer prostate, PSAD plays a major role. Estimation of the volume using digital rectal exam or PSA are inaccurate. This study aims to conduct a retrospective review to evaluate the accuracy of prostatic volume estimates in patients who had TRUS and MRI scans, comparing the obtained volumes to the reference standard which is the actual volume of radical prostatectomy specimen.

Method: Data was collected retrospectively for all patients who had robotic assisted radical prostatectomy (RRP) at the Royal Stoke Hospital between October 2015 and October 2018. Clinical information of TRUS and MRI prostate volumes were extracted from PACS and prostate specimen volume was collected from the histopathology report of RRP specimen.

Results: Pathological specimen prostate volume showed a positive relationship between MRI and TRUS prostate volume with a correlation efficient of 0.71 for MRI vs RRP specimen volume and 0.81 for TRUS vs RRP specimen volume. Mean TRUS volume underestimated prostate volume by 7.33cc and mean MRI volume underestimated prostate volume by 0.02cc

Conclusions: Although the study showed positive correlation between measuring prostate volume using MRI and TRUS as compared to RRP specimens, MRI showed a greater accuracy as compared to TRUS. We conclude that using MRI prostate volume gives more precise prostate volume estimate aiding appropriate therapeutic planning of patients with prostate cancer.