Prostate volume predicts high grade prostate cancer both in digital rectal examination negative (ct1c) and positive (≥ct2) patients.

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Abstract

We aimed to assess the relationship between prostate volume (PV) and high grade prostate carcinoma (HGPCa) in patients with benign and suspicious digital rectal examination (DRE) in our prostate biopsy cohort.

MATERIALS AND METHODS: Between 2009-2012, 759 consecutive initial transrectal systematic 12 cores prostate biopsies were included. PVs were calculated with transrectal ultrasound. Only prostate adenocarcinomas (PCa) were included into the study. For standardization, patients with missing data, and who have been exposed to any form of hormonal or radiation therapy were excluded. Patients were categorized with DRE (negative or positive) and Gleason sum [<7: low grade PCa (LGPCa), ≥7: HGPCa].

RESULTS: Median PV was significantly lower in patients with HGPCa. There was a significantly increased risk of HGPCa with PV according to all groups in univariate logistic regression (LR). The significant relationship continued in multivariate LR with PSA and age. From the ROC curve analyses, again a significantly statistical concordance was found between the detection of HGPCa and PV (AUC: 0.63, p<0.001), as well as between HGPCa and tPSA (AUC: 0.73, p<0.001). tPSA and PV were also significantly concordant with HGPCa both in DRE negative and positive patients.

CONCLUSIONS: There is a significant relationship between HGPCa and decreasing PV. The continued significant relationship both in DRE negative and positive patients reinforces this relation.