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FACTORS PREDICTING SUCCESS OF MEDICAL THERAPY IN THE MANAGEMENT OF CLINICAL BENIGN PROSTATIC HYPERPLASIA: ROLE OF POSITION-RELATED CHANGES IN URINE FLOW RATES

Hypothesis / aims of study
We examined the role of voiding position-specific flow rates in predicting success of the medical therapy for clinical benign prostatic hyperplasia (BPH).

Study design, materials and methods
Treatment naïve men older than 50years with bothersome lower urinary tract symptoms (LUTS) defined as IPSS score >7 and global quality of life (QOL) score >2 were enrolled. Men with diseases other than BPH affecting LUT-function were excluded. Participants were asked to void in digital uroflowmeter three times, all on separate occasions, once in each of the standing, sitting, and squatting positions. Post-void residue (PVR) was measured using ultrasound. The study was repeated in the same manner 12weeks after starting medical management for BPH (tamsulosin with/without dutasteride), whose success was defined as IPSS ≤7 or QOL ≤2.

Results
Thirty men with mean age 65.4±7.0y, IPSS 23±8, QOL 4±1 & prostate volume 38.8±14.8cc completed the protocol. Baseline IPSS, QOL did not have significant correlation with flow rates. Volume-corrected maximum flow rates (cQmax) were highest in standing position in 11, sitting in 5 and squatting in 14 patients. A significant improvement was observed in flow-rates and PVR with treatment (p<0.05). Baseline prostate size <30 (p=0.016), maximum cQmax in squatting position (p=0.009) and QOL (p=0.017) predicted success in terms of QOL, using logistic regression analysis (forward likelihood ratio method) with OR 0.028, 50.92 and 0.018, respectively. Overall predictive accuracy of this model was 90% with ROC area under curve 0.920 (sensitivity 95%, specificity 80%; overall p = 0.002, df=3, chi^2=20.78; fig 1). Upto 69.5% variability could be explained on this model. The former also predicted the success in terms of IPSS (p=0.008).
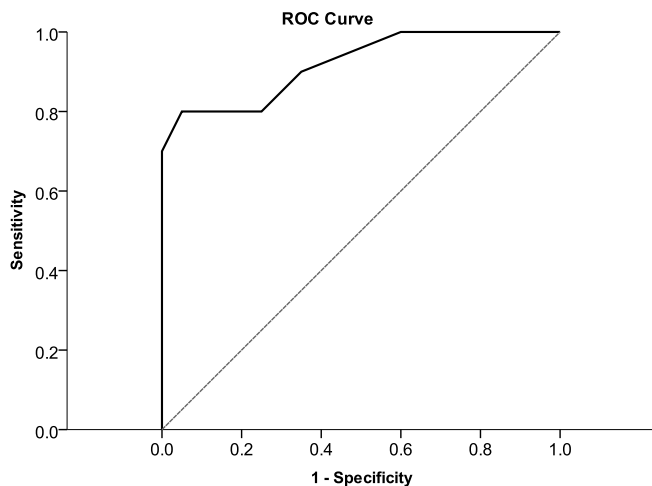
Diagonal segments are produced by ties.

Interpretation of results
Men with symptomatic BPH tend to have highest flow rates in squatting position, irrespective of preferred natural voiding position. The outcome of medical therapy for BPH can be predicted by baseline QOL, prostate size <30gm and finding of highest cQmax in squatting position.

Concluding message
Computation of parameters of uroflowmetry in three positions (standing, sitting and squatting) has potential of predicting the outcome of medical therapy for benign prostatic hyperplasia, whereas, any single position does not provide such potential.

Specify source of funding or grant	**none**
Is this a clinical trial?	**No**
What were the subjects in the study?	**HUMAN**
Was this study approved by an ethics committee?	**Yes**
Specify Name of Ethics Committee	**institute ethics committee, postgraduate institute of medical education and research**
Was the Declaration of Helsinki followed?	**Yes**
Was informed consent obtained from the patients?	**Yes**