

RELIABILITY OF ASSESSING MALE LOWER URINARY TRACT SYMPTOMS BASED ON FREQUENCY-VOLUME CHARTS AND THE INTERNATIONAL PROSTATE SYMPTOM SCORE: A RETROSPECTIVE COHORT ANALYSIS

Hypothesis / aims of study

Frequency-volume (FV) charts are a non-invasive, easy-to-use and inexpensive tool in the assessment, diagnosis and monitoring of interventions in men with lower urinary tract symptoms (LUTS). International clinical practice guidelines on benign prostatic hyperplasia (BPH) and LUTS, including European Association of Urology (EAU) and American Urology Association (AUA) recommend the use of FV charts when assessing men with LUTS. However, they are not always widely used as a first-line investigation and their role in current practice is ill-defined (1). Moreover, previous work has demonstrated poor agreement between the responses on the FV charts and the standardised International Prostate Symptom Score (IPSS) questionnaire (2). The current study aims to identify the discrepancies between the objective assessment of male LUTS and the information provided by self-completed FV chart, IPSS questionnaire and uroflowmetry.

Study design, materials and methods

From March 2015 to June 2015 patients who visited the outpatient male LUTS clinic were required to complete a 4-day FV chart and IPSS questionnaire. We performed a retrospective analysis of consecutive patients attending the male LUTS clinic during this period in order to obtain a representative snapshot assessment of their symptoms. Our assessment included patient demographics, volunteered storage and voiding symptoms as represented by a LUTS proforma, 4-day FV chart, uroflowmetry and residual volume estimation, serum prostate specific antigen (PSA) and IPSS questionnaire.

Furthermore, we sub-categorized storage and voiding symptoms as per International Continence Society Standardisation Document. We then calculated the proportion of these patient-volunteered symptoms as a percentage of overall symptoms. A comparative analysis was performed with these data and the IPSS responses.

Results

A total of 44 patients were included in the study. Mean age was 70 years (SD 9.8). The mean voided volume was 274 ml (SD 120) with a mean maximum flow rate (Q_{max}) 15.7 ml s⁻¹ (SD 9.4) and a mean residual volume of 91 ml (SD 105). The mean PSA was 2.9 ng/mL (SD 3). The mean IPSS and quality of life (QoL) scores were 16.7/35 (SD 8.6) and 3.6/6 (SD 1.3), respectively. Simple analysis of nocturia by IPSS and nocturia by FV chart showed a significant positive correlation (Pearson correlation coefficient $r(42) = 0.4$, $p < 0.01$). Furthermore, daytime frequency, classified as passing urine between 6am and 11pm, as recorded on FV charts showed a similar positive correlation with daytime frequency by IPSS (Pearson correlation coefficient $r(42) = 0.4$, $p < 0.01$).

There was a strong positive correlation between the overall mean percentage of patient-volunteered storage and voiding symptoms with IPSS (Pearson correlation coefficient $r(42) = 0.7$; $p < 0.01$). Volunteered voiding symptoms showed a statistically greater correlation with voiding symptom domains on IPSS (Pearson correlation coefficient $r(42) = 0.8$; $p < 0.01$) than that for storage symptoms (Pearson correlation coefficient $r(42) = 0.003$; $p = 0.9$).

Interpretation of results

Our results demonstrate that the FV chart is a reliable indicator of LUTS when assessed in comparison to IPSS, especially when investigating nocturia and daytime frequency. Patient-volunteered voiding symptoms demonstrate a better correlation with corresponding IPSS domains than volunteered storage symptoms.

Concluding message

British Association of Urological Surgeons (BAUS) and Royal College of Surgeons England (RCSEng) guidelines for the management of LUTS recommend the use of FV charts prior to a secondary care urological referral. However, previous work has demonstrated only 5% of patients referred to urology for LUTS had a FV chart completed in primary care (3). Despite their simplicity, FV charts when used appropriately offer reliable objective information regarding voiding patterns and incontinence; their use should be encouraged both in primary and secondary care settings. Symptoms volunteered by patients during the clinical history correlate strongly with symptoms measured via IPSS. Furthermore the proportion of storage and voiding symptoms given in the history correlates well with the proportions calculated from the IPSS which further validates the use of this questionnaire in men with LUTS.

References

1. Sooriakumaran P, Brown C, Emberton M. Frequency volume charts should be used in men with lower urinary tract symptoms. *International Journal of Surgery*. 2005; 3(2): 147-150
2. Yap et al. The relationship between objective frequency-volume chart data and the I-PSS in men with lower urinary tract symptoms. *European Urology*. 2007; 52(3): 811-8
3. Bray A, Griffiths C, Pickard R, Harding C, Drinnan M. Do primary care practitioners comply with NICE guidelines? *BJU International*. 2003;111(S3): 60

Disclosures

Funding: N/A - no funding or grant. **Clinical Trial:** No **Subjects:** NONE