

Are Preference for Automated Electronic Bladder Diaries preferred versus Paper Bladder Diaries in Benign Prostatic Hyperplasia BPH Patients with Nocturia? An interim analysis.

Introduction and Objectives: Benign prostatic hyperplasia (BPH) affects up to 80% of men by age 80 and commonly presents with lower urinary tract symptoms (LUTS), including nocturia. Nocturia, often due to nocturnal polyuria secondary to conditions such as obstructive sleep apnea, requires accurate assessment to guide management. Although 3-day bladder diaries (BDs) are standard for evaluating nocturia, paper-based BDs (pBDs) are limited by poor adherence and data inaccuracy. The automated electronic bladder diary (eBD; Minze Diary Pod, Antwerp, Belgium) offers an alternative by recording voiding data electronically and uploading results to a provider portal. The objective of this study was to compare patient preference for pBD vs. eBD formats among BPH patients with nocturia.

Methods: Male patients aged 18 years or older who presented with nocturia and possessed a Bluetooth®-enabled app-based electronic device were recruited. Participants completed a 3-day pBD and a 3-day eBD with a 1-week washout period in between. After each BD, patients completed surveys evaluating aspects of their experience as well as a final survey assessing overall preference. The primary outcome was patient preference between the two BDs. Secondary outcomes included patient experience and BD usability, i.e. comprehensibility, burden, efficiency, comfort, spillage, hygiene, and size, measured on 5-point Likert scales. Outcomes were analyzed using chi-square and Mann-Whitney U tests as appropriate.

Results: Of 63 patients screened, 22 were enrolled. The main reasons for declining participation were lack of interest due to inconvenience or not owning an appropriate electronic device. Among enrolled participants, 10 completed the study, 5 are currently active, and 7 dropped out (5 due to time constraints, 2 lost to follow-up). Among the 10 who completed the study, 80% preferred the eBD, 10% preferred the pBD, and 10% had no preference ($p=0.007$). No significant differences were found with respect to experience and usability variables between the two BDs.

Conclusions: Preliminary results from our study indicate a patient preference for eBD over pBD. However, what aspects of the eBD led to this preference remain unclear. High screening failure and dropout rates were noted. The next phase of the study will include recruiting our target number of participants ($n= 56$) and developing strategies to address recruitment challenges and reduce attrition. Understanding patient preferences between electronic and paper bladder diaries will allow urologists to modify their clinic workflow to obtain collect more accurate and reliable data efficiently, while providing patients with a more seamless and user-friendly experience.

Sponsorship: Electronic bladder diaries used in the study are donated by Minze Health