

How to Assess Maximum Voided Volume: Comparison Of Maximum Voided Volume Obtained During Uroflow To Maximum Voided Volume Obtained By Frequency Volume Chart in Women

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Hypothesis/ Aims of Study

- Urinary flow rate (Q) is one the most important yardsticks by which lower urinary tract symptoms (LUTS) are assessed and it has been well documented that Qmax is dependent upon voided volume (VV).
- Maximum voided volume (MVV) is another useful metric of LUTS.
- Most urologists ask their patients to wait to void until they feel a full bladder prior to obtaining Q; so, by proxy, measurement of uroflow voided volume (QVV) has been used as a measure of MVV.
- The aim of this study is to compare QVV to MVV obtained by a 24-hour bladder diary (24H BD).

Study Design/ Materials and Methods

- Retrospective study of patients evaluated for LUTS who completed the Lower Urinary Tract Symptoms Score, Q, & 24H BD on a mobile app (figure 1), website, or paper.
- The MVV was collected from the 24H BD.
- A contemporaneous QVV was obtained after the patient was told to drink until his/her bladder felt full.
- Bladder diaries with no contemporaneous uroflow were excluded.
- Spearman's correlation was calculated between the QVV and 24hMVV data.

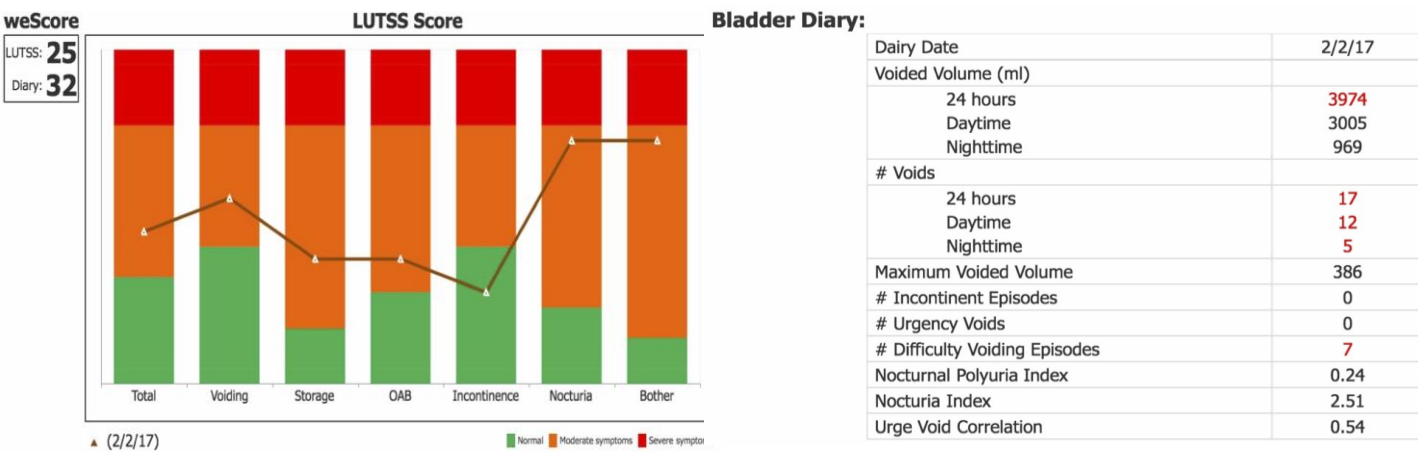


Figure 1. The total LUTSS and 5 sub-scores are color-coded to represent normal (green), moderate (orange), and severe (red) symptoms. The Bladder diary summary shows results of the 24-hour bladder diary with abnormalities in red.

Results

QVV vs 24h Bladder Diary 24hMVV in Females

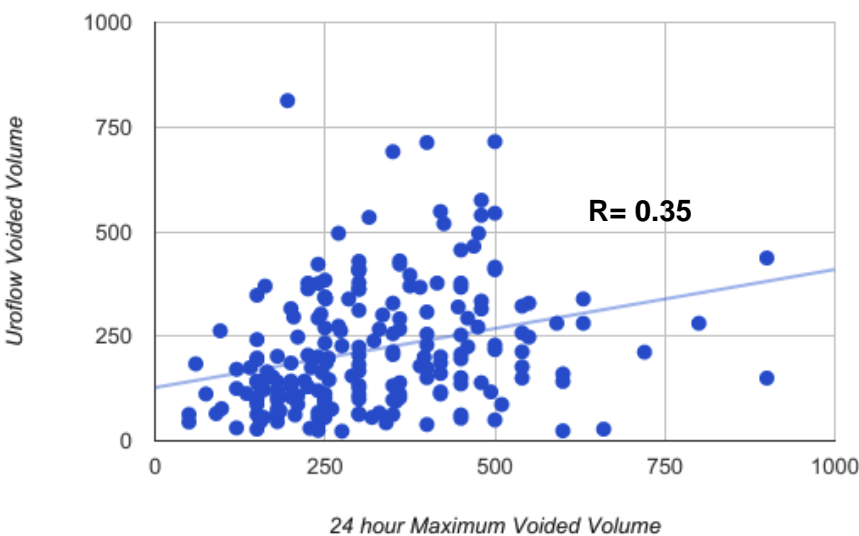


Figure 1. Scatterplot of bladder diary 24hMVV vs. QVV in females (n=205)

- 643 patients, ages 20-94 (average 57, SD 17), completed bladder diaries.
- Of the 236 women in this study, 205 have contemporaneous uroflow data inputted to date.
- MVV was, on average, about 104 mL > QVV.

Interpretation of Results/ Concluding Message

- There was only a weak correlation between QVV and 24hMVV in women.
- MVV is best assessed by comparing both uroflow and frequency volume chart data.
- Relying on only one of these measures can underestimate MVV by as much as 500% or more in women.
- On average, the MVV obtained by frequency volume chart was over 100 mL greater than that obtained by uroflow data.

Disclosure Statement

Dr. Blaivas is co-founder of Symptelligence Medical Informatics, LLC.