

Introduction

- When evaluating multiple sclerosis (MS) patients with lower urinary tract symptoms (LUTS), clinicians rarely order urodynamics and rely instead on history, ultrasound, uroflowmetry and bladder diary (BD) to clearly evaluate the patient's lower urinary tract function.
- BD is the only objective patient-generated method that portrays the real-life scenario and embodies a home-monitoring of patients. Yet, its utility is still questioned.

Aim

To assess the necessity of a bladder diary when evaluating a MS patient with LUTS

Methods and Materials

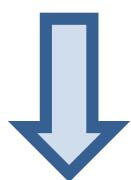
44 patients with MS and LUTS were recruited, and they underwent :

Bladder ultrasound



- Bladder volume
- Post void residual volume
- Urinated volume **Vus**

Uroflowmetry



Urinated volume **Vuf**

Urodynamic studies



Volumes corresponding to:

- B1 → **Vb1**
- B2 → **Vb2**
- B3 → **Vb3**
- Maximum bladder capacity → **Vc**

24h bladder diary



Filled by the patient, from which were calculated :

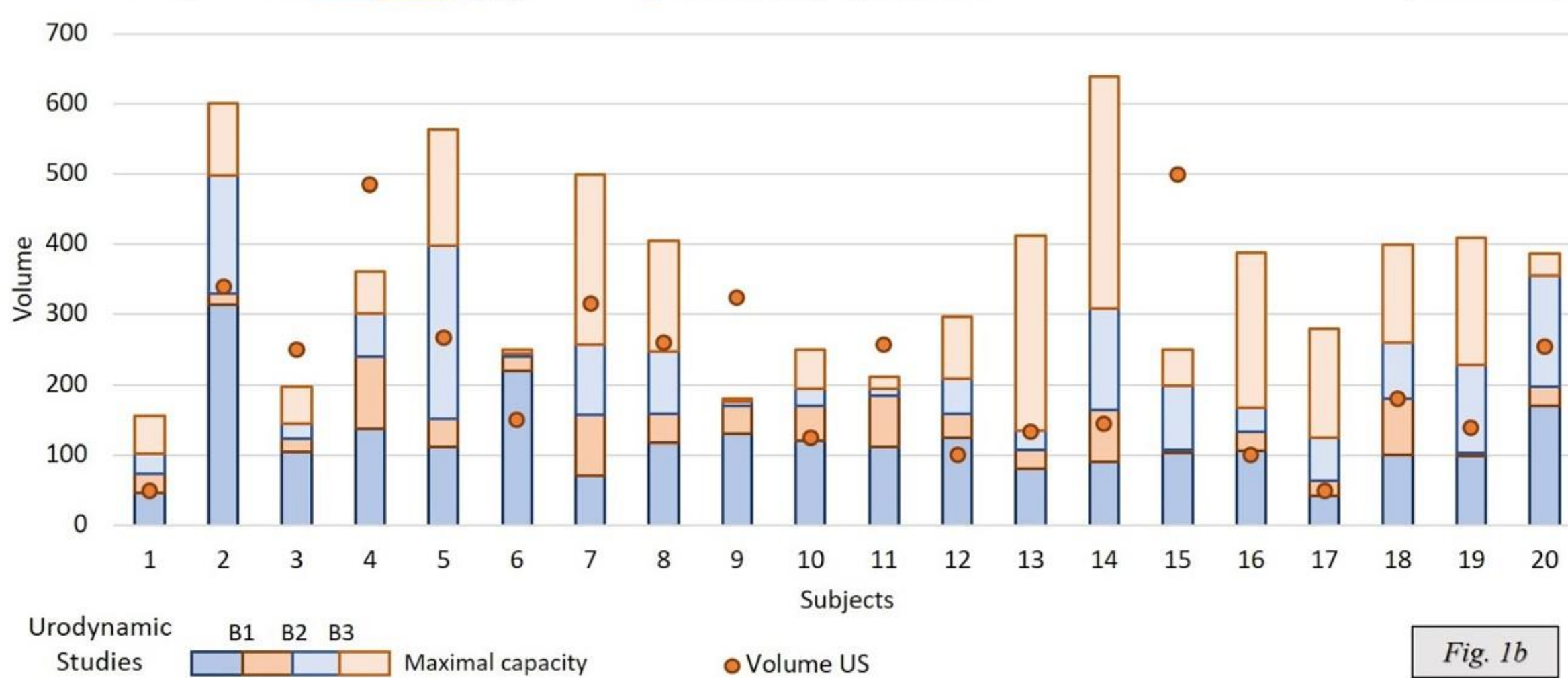
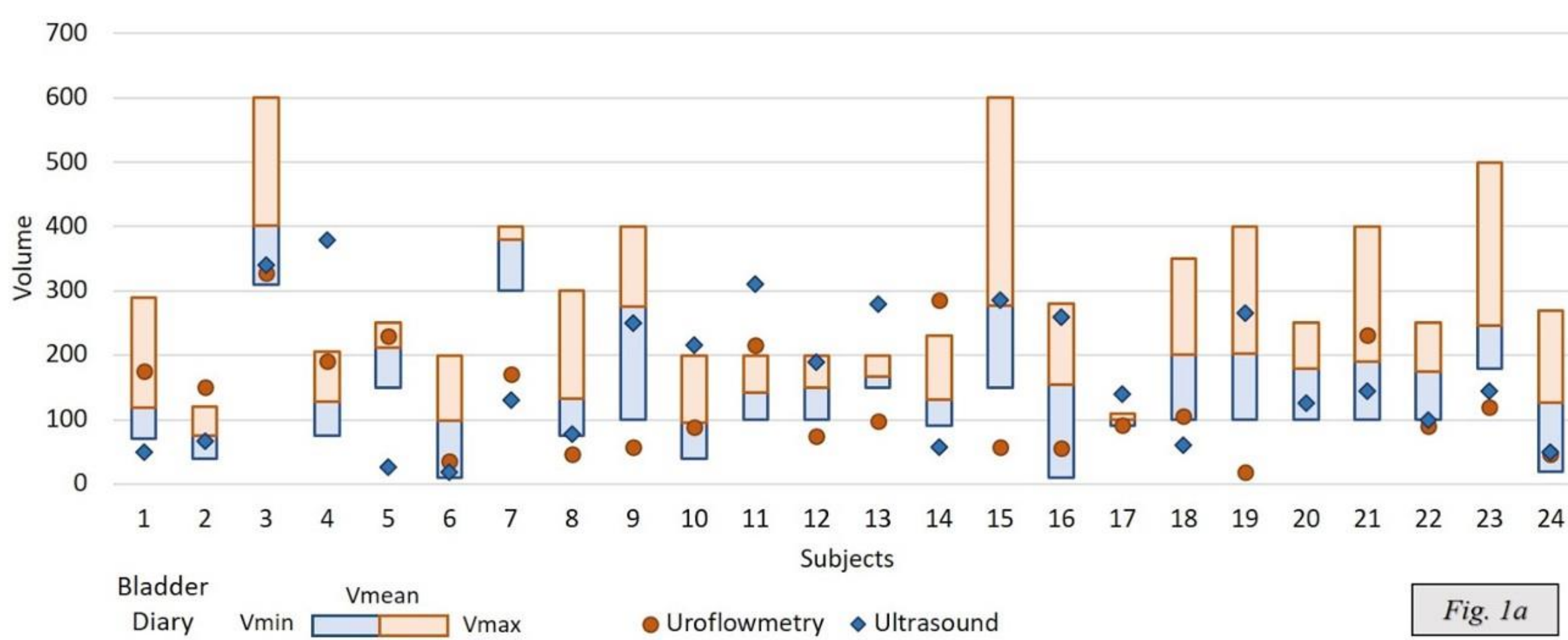
- Minimal → **Vmin**
 - Mean → **Vmean**
 - Maximal → **Vmax**
- urinated volumes.

- We assessed the agreement between the urinated volume based on ultrasound and uroflowmetry, and the urinated volume range of the voiding diary, in a sample of 24 patients (**sample 1**).
- Then, we assessed the agreement between the bladder volume on ultrasound and the different volumes obtained in the urodynamic studies, in another sample of 20 patients (**sample 2**).
- The patients were chosen in each sample based on the tests they have undergone.

Results

- In sample 1, **50% of patients (12/24)** had their **Vuf outside the voiding diary volume range [Vmin-Vmax]**, and **46% (11/24)** had their **Vus outside the voiding diary volume range (fig1a)**.
- In sample 2, **15% (3/20)** had their **Vus below Vb1**; **25% (5/20)** had their **Vus in [Vb1-Vb2]** range; **25% (5/20)** had their **Vus in [Vb2-Vb3]** range; **10% (2/20)** had their **Vus in [Vb3-Vc]** range; and **25% (5/20)** had their **Vus above Vc (fig1b)**.

Figure 1. a) Vuf and Vus distribution among bladder diary volumes; b) Vus distribution among urodynamic studies volumes



Discussion

- Evaluating the urinated volume using ultrasound and uroflowmetry seems instantaneous and different from the bladder diary which represents more the real-life scenario.
- The ultrasound volume is heterogeneously distributed among the cystomanometry capacities (B1, B2, B3 and maximal capacity).

Conclusions

- Clinicians should consider relying more on bladder diary (not only frequency but also minimal and maximal urinated volumes) as a home-monitoring of lower urinary tract function in MS patients with LUTS.
- Future randomized-controlled trials should be undergone in order to confirm these findings.