

## ARE UROFLOWS (QMAX AND VOIDED VOLUME) IN HOSPITAL DIFFERENT FROM THOSE AT HOME : UROFLOWMETRY IN HOSPITAL AND P-FLOWDIARY® AT HOME

### Hypothesis / aims of study

It has been generally accepted that uroflowmetry is an important tool with lower urinary tract symptoms. However, it is difficult to evaluate the exact data because it is performed only in hospital. P-Flowdiary® is a handy uroflowmetry device. It can easily record all uroflows at home and the frequency volume chart (FVC). We investigate the relation with uroflows between at home and in hospital.

### Study design, materials and methods

Person, who visited our hospital between 2015 and 2016, and agreed to participate in our study, is available. We investigate uroflows between at home and in hospital. At home 2 days or more uroflows were recorded by using P-Flowdiary®. In hospital a uroflow was recorded only once. We analyzed the uroflow parameters; Qmax, Voided volume.

### Results

10 male, aged 45-79 years, mean age was 72 years old participated in this study. The mean IPSS was 19.5+/-5.7, and the mean OABSS was 5.4+/-2.4.

Total 312 uroflows, mean was 56.7 times/ person, were recorded at home.

In hospital, mean Qmax was 9.8+/-4.9mL/s, and Voided volume(VV) was 117.3+/-54.3mL. At home mean Qmax was 13.3+/-4.4mL/s, and Voided volume was 156.3+/-46.3mL. Qmax was significantly different ( $p=0.00935$ ). But VV was not significantly different ( $p=0.0593$ ).

We divided in two groups; Day time and night time. Qmax was 14.0 mL/s in daytime and 12.9 mL/s in night time and was not significantly different ( $p=0.652$ ). VV was 138.9mL to 202.3mL ( $p=0.00506$ ).

We appreciated Qmax between in hospital and day time / night time at home. Qmax between in hospital and day time at home, was significantly different ( $p=0.0069$ ), but Qmax between in hospital and night time at home, was not significantly different ( $p=0.092$ ).

We appreciate VV between in hospital and day time / night time at home. VV between in hospital and day time at home, was not significantly different ( $p=0.0069$ ), but Qmax between in hospital and night time at home, was significantly different ( $p=0.0369$ ).

		1	2	3	4	5	6	7	8	9	10	average	SD	
uroflowmetry	Qmax (ml/s)	10.8	5.8	6.2	10.7	2.6	16.3	9.9	17.8	12.4	5	9.8	4.9	
	VV (ml)	137	134	109	83	17	139	112	208	171	63	117.3	54.3	
P-Flowdiary	Total	Qmax	12.1	4.8	9.2	14.4	12.5	18.8	17.3	18.8	13.2	12.1	13.3	4.4
		VV	110.1	109.8	161.5	140.6	141.7	223.0	224.6	208.5	132.2	110.1	156.2	46.3
	day time	Qmax	11.9	5.2	10.3	13.5	8.1	18.7	21.3	25.5	13.3	11.9	14.0	6.2
		VV	88.3	109.5	157.3	103.1	48.3	213.3	249.2	208.2	123.8	88.3	138.9	65.4
night time	Qmax	12.4	4.1	6.8	16.7	17.4	22.7	11.2	12.6	12.6	12.4	12.9	5.3	
	VV	144.7	110.4	170.4	224.2	243.6	427.1	187.6	208.9	161.7	144.7	202.3	88.6	

Table: Uroflowmetry data in hospital and P-Flowdiary at home

Qmax Uroflowmetry vs P-Flowdiary (total), day time vs night time (P-Flowdiary) red letter is higher

### Interpretation of results

uroflowmetry is an important tool with lower urinary tract symptoms. But it is not easy to get the exact data, because it is not normal voiding. It is influenced by their emotion and the environment and so on. It is not an unusual. Someone cannot storage in hospital, but can storage at home.

Our data shows that Qmax between in hospital and at home is significantly different. In 9 patient Qmax at home is higher than in hospital. We underestimate their voiding.

Qmax between in daytime and in night time is not significantly different. A half patients are good in daytime, another half are good in night time. It is often said that it's hard to void in night time, but it's not entirely true.

All patient cannot estimate the usual storage and voiding. So we should not be satisfied with one uroflowmetry date. We repeat uroflowmetry, until physician and patient are satisfied.

FVC is a good tool to check storage patterns, but is difficult to record.

Night time VV is significantly more than daytime, but Qmax is not significant. A half patients are good in daytime, another half is good in night time. It is often said that it's easy to storage in night time, but it's not entirely true.

#### Concluding message

P-Flowdiary® is a novel device to record all uroflows and FVC. So we can estimate Qmax and VV at home.

Qmax between in hospital and at home is different. So we are not satisfied with one uroflowmetry date. If patient make complaint about the data, we should retry uroflowmetry.

#### Disclosures

**Funding:** none **Clinical Trial:** No **Subjects:** HUMAN **Ethics Committee:** Shiga University of medical Science **Helsinki:** Yes  
**Informed Consent:** Yes