

## Consideration about the utility of Urodynamic study before

Transurethral resection of prostate (TUR-P) in patients with obstructive pattern in Schäfer nomogram.

Kotaro Otsuka<sup>1</sup>Yusuke Awa<sup>2</sup>, Kosuke Mikami<sup>1</sup>, Kyokusin Hou<sup>1</sup>, Takahito Suyama<sup>1</sup>,  
Kazuhiro Araki<sup>1</sup>, Hiroshi Masuda<sup>1</sup>, Satoko Kojima<sup>1</sup>, Yukio Naya<sup>1</sup><sup>1</sup> Department of Urology, Teikyo University Chiba Medical Center, <sup>2</sup> Funabashi Clinic

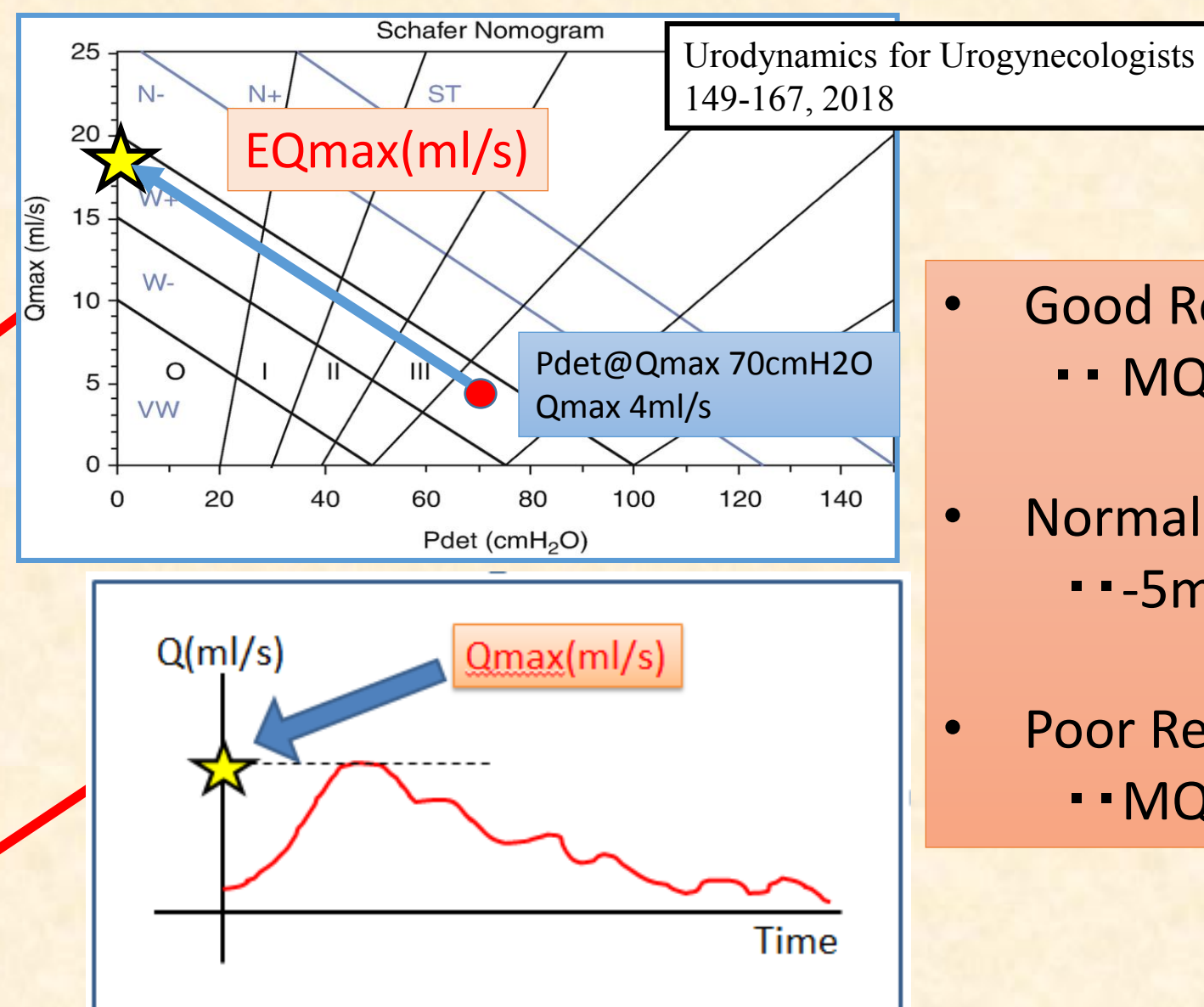
## ABSTRACT

One of the surgical therapy for benign prostate hyperplasia (BPH), Transurethral resection of prostate (TUR-P) is performed. Urodynamic study (UDS) is a useful examination in a diagnosis of the clinical condition and the cause of LUTS. Some patients do not improve their urination after surgery in spite of their UDS results shown obstructive pattern. Thus we compared urine flow of predicted value estimated by UDS before surgery with measured value after an operation of TUR-P.

## METHODS

41 male patients included  
(from 2014 to 2018)

Urodynamic Study

TUR-P  
(performed by senior residents)Uroflowmetry  
(at least 3 months after surgery)

- Good Responder (N=8)
  - MQmax -EQmax  $\geq$  5ml/s
- Normal Responder (N=16)
  - -5ml/s < MQmax -EQmax < 5ml/s
- Poor Responder (N=17)
  - MQmax -EQmax  $\leq$  -5ml/s

## RESULTS

Patient Background	
Number of patients	41
Age (years old)	71.5[54-80]
Prostate Volume (ml)	54.9[12.8-106]
Preoperative PSA (ng/ml)	3.82[0.53-38.7]
Preoperative Qmax (ml/s)	4[0-11]
Urinary retention history (%)	47.6
Resected Prostate Volume (g)	19.75[4.5-51]
Resected/Preoperative Prostate (g/ml)	0.424[0.185-0.886]

EQmax(ml/s)	MQmax(ml/s)	P value
18 [5-32]	14 [4-40]	0.054

Paired t-test

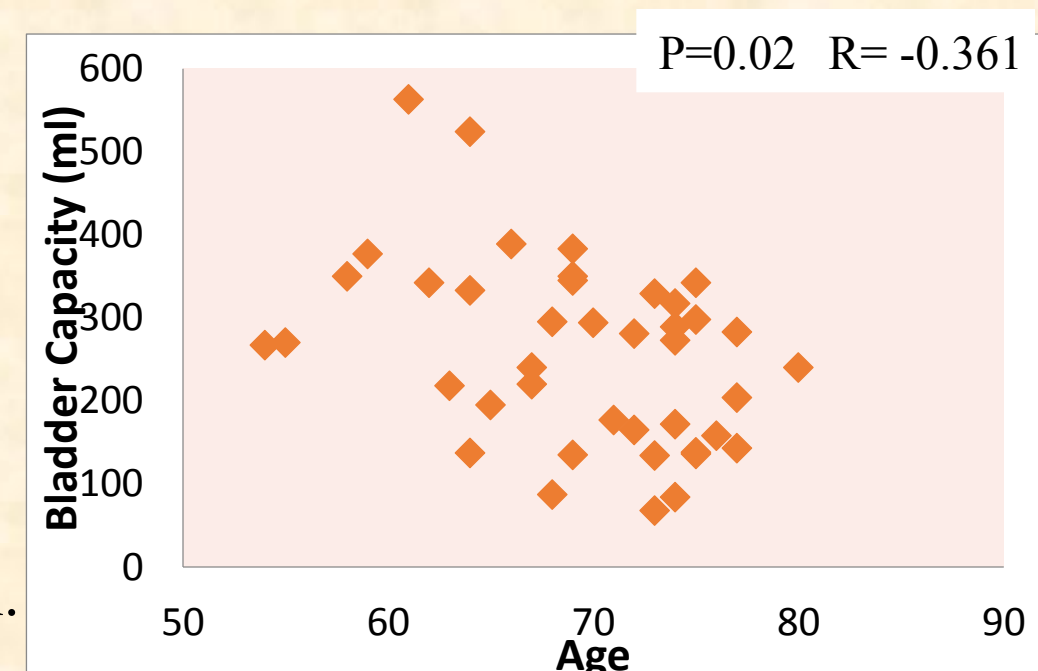
	Good responder (N=8)	Intermediate responder (N=16)	Poor responder (N=17)	P (One-Way ANOVA)	P (Good vs Intermediate)	P (Poor vs Intermediate)
Age	68.5[62-74]	67.5[54-80]	74[54-77]	0.243	0.854	<b>0.003</b>
Prostate Volume (ml)	58.6[31-85]	47.9[12.8-80]	55.25[13.5-106]	0.310	0.083	0.141
Preoperative PSA(ng/ml)	5.11[1.15-21.8]	3.58[0.53-38.7]	4.37[0.56-8.52]	0.304	0.624	0.792
Preoperative Qmax(ml/s)	5.5[0-13]	4[0-7]	4[0-9]	0.280	0.270	0.900
Pdet@Qmax(mmH2O)	74.5[15-139]	62[18-130]	97[64-205]	<b>0.008</b>	0.327	<b>0.002</b>
First Sensation(ml)	104[51-322]	99[20-239]	109[65-227]	0.508	0.475	0.830
Strong Desire(ml)	239[65-518]	197[41-378]	201[82-290]	0.351	0.250	0.560
Capacity(ml)	325[68-524]	256.5[87-563]	218[84-345]	0.186	0.210	0.104
EQmax (ml/s)	20[3-30]	15 [5-25]	20[14-32]	<b>0.008</b>	0.063	<b>0.001</b>
Resected Prostate Volume(g)	20[5.5-51]	17.5[4.5-41.5]	22[5.5-50]	0.904	0.270	0.641
Resected/Preoperative Prostate (g/ml)	0.508[0.286-0.60]	0.478[0.185-0.886]	0.405[0.225-0.57]	0.401	0.265	0.273
MQmax(ml/s)	27.5[21-40]	15[8-22]	9[4-23]	<b>&lt;0.001</b>	<b>&lt;0.001</b>	<b>0.001</b>
Postoperative Voided Volume(ml)	267[112-544]	143[55-255]	122[52-250]	<b>0.003</b>	<b>0.034</b>	0.368
Postoperative Residual Urine(ml)	45[0-70]	16[0-180]	15[0-78]	0.400	0.130	0.668

## DISCUSSION

In Good responder group, the volume of prostate, resected prostate volume and the proportion of resected volume of prostate (Resected / Preoperative prostate volume) were tend to be more than other groups. It seems that good Qmax would be expected by resected larger volume in the patients with large prostate.

In Poor responder group, Pdet@Qmax was higher in spite of their poor response. Age might be a factor that causes poor therapeutic effect. Bladder capacity is negatively related to age. Decreased bladder capacity caused by aging might be affected low MQmax.

The limitation was smaller number of patients, surgeons were some senior residents.



## CONCLUSIONS

- The median EQmax obtained by UDS was smaller than the MQmax after TUR-P.
- There were some cases in which there was a large difference from predicted value.
- By excising adequately for larger adenomas, better urination can be expected.
- It was suggested that older age may be a factor that causes worse results of Qmax than predicted.