

## VIDEO URODYNAMIC CHARACTERISTICS OF PATIENTS WITH POSTURAL TACHYCARDIA SYNDROME

### Hypothesis / aims of study

Postural Tachycardia Syndrome (POTS) primarily affects females between the ages of 15 and 50. It results from an abnormality in the autonomic nervous systems that represents a form of orthostatic intolerance. Patients experience a tachycardia leading to an increment in their heart rate of more than 30 beats per minute on standing or sitting up, as well as dizziness or fainting secondary to cerebral hypoperfusion. There is increasing acknowledgement that the associated autonomic dysfunction means that some patients may experience lower urinary tract symptoms. The aim of this study was to ascertain the urodynamic characteristic of patients with a diagnosis of POTS who present with lower urinary tract symptoms

### Study design, materials and methods

This is a retrospective study of patients referred to our tertiary referral urology clinic between October 2015 and March 2016 with a diagnosis of POTS and lower urinary tract symptoms. The women were evaluated with a comprehensive history, examination and videourodynamic investigation. Demographic and urodynamic parameters are given in Table 1. All video urodynamic investigations were performed in a standardised way on the identical fluoroscopic device by the same clinician and specialist nurse

### Results

16 patients, all of which women with a diagnosis of POTS were referred with lower urinary tract symptoms during this time. All had video urodynamic assessment. The abnormal urodynamic presentations included reduced bladder sensitivity with absent normal desire (n=3), absent strong desire (n=6), detrusor overactivity (n=3) and average to large bladder capacity of more than 500ml (n=6). Patients voided with abdominal straining; all patients had a well supported bladder neck with no evidence of stress urinary incontinence. There was no loss of compliance in any of the patients; there was some low level detrusor overactivity (n=3)

	Number of patients	Minimum value	Maximum value	Median results
<b>AGE</b>	16	18	63	36
<b>FIRST SENSATION (ml)</b>	14/16 2/16 ABSENT	50	350	128
<b>NORMAL DESIRE (ml)</b>	13/16 3/16 ABSENT	73	450	219
<b>STRONG DESIRE (ml)</b>	9/16 7/16 ABSENT	114	500	222
<b>Pdet Qmax (cmH20)</b>	10/16 6/16 ABSENT	11	48	23.5
<b>Q max (ml/s)</b>	10/16 6/16 ABSENT	3	49	23

Table 1: Results of urodynamic findings in POTS populations

### Interpretation of results

All patients had compliant bladders, with only 3/16 patients having urodynamic detrusor overactivity. POTS was associated with impaired sensation of bladder fullness, inefficient emptying with a straining pattern of voiding, but no loss of compliance.

### Concluding message

Video urodynamic studies in this POTS population identify a poor sensate bladder with a large capacity due to the autonomic dysfunction. Bladders are compliant and detrusor overactivity is an infrequent occurrence. Patients are therefore advised to perform timed voiding and in some cases to self catheterisation to improve the efficiency of bladder emptying and reduce the frequency of urinary tract infections.

### Disclosures

**Funding:** NONE **Clinical Trial:** No **Subjects:** HUMAN **Ethics not Req'd:** The investigations conducted were a necessary part of this condition and not for research purposes **Helsinki:** Yes **Informed Consent:** Yes