

## VOIDING SYMPTOMS CLEARED BY TREATING INFECTION

### Hypothesis

Female obstructive voiding symptoms in the absence of neurological or anatomical abnormality are very important markers of urinary tract infection (UTI).

### Background

A recent study reported an unexpected association between voiding symptoms in women and independent markers of lower urinary tract inflammation and infection (1). The data implied that voiding symptoms of hesitancy, reduced stream, intermittency, straining to void, terminal dribbling, post micturition dribbling, and incomplete emptying with or without double voiding might be better indicators of lower urinary tract infection in women than pain.

We tested this proposition by examining the response of voiding symptoms during the treatment of women with lower urinary tract symptoms (LUTS), who had been found to have microscopic pyuria. They were initiated on long term, full dose oral urinary antibiotic treatment based on this particular finding.

### Study design, materials and methods

The inclusion criteria were consenting adult females aged  $\geq 18$  years with symptoms of LUTS predominantly OAB, pyuria  $\geq 10$  white cells  $\mu\text{l}^{-1}$  and had a negative routine MSU culture in our NHS laboratory. The demographic data, age, sex and duration of symptoms were recorded. Their reported frequency and incontinence rate was recorded. Symptoms of urgency, voiding dysfunction, stress incontinence and pain were recorded using the validated question sets. These data were summarised by counting the number of symptoms for each group.

Resolution of obstructive voiding symptoms and clearance of pyuria were taken as the endpoints in this study.

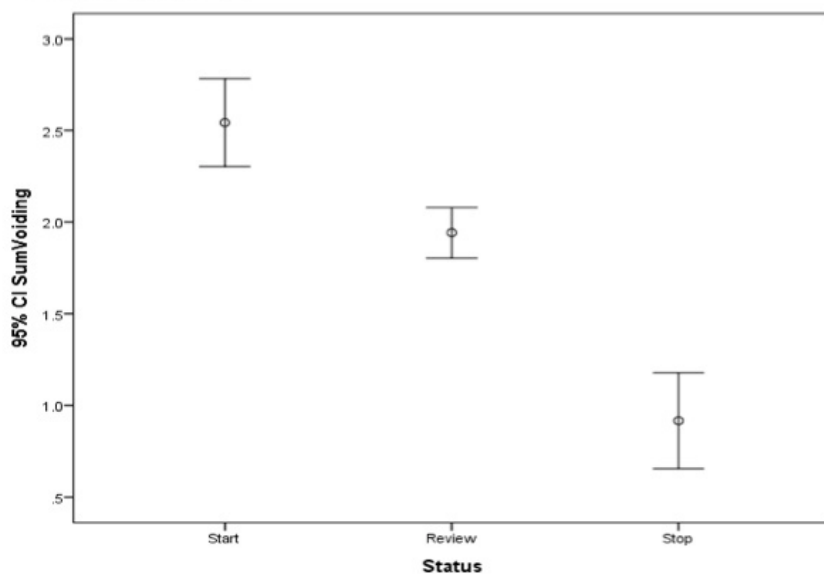
### Results

351 female patients attending this specialist tertiary level centre from January 2010 to December 2012 were included in the observational study. Mean age was 52.23 (95% CI 50 to 54). They had suffered symptoms for a mean of 5 years (95%CI = 4.4 to 5.3). Their average 24-hour frequency was 12 (95%CI = 10 to 13) and average 24-hour incontinence 1 (95% CI 0.7 to 1.1). 234 (67%) patients described at least one urge symptom; 122 (35%) had  $\geq 1$  stress symptoms, 212 (60%) had  $\geq 1$  voiding symptoms and 161 (46%) had  $\geq 1$  pain symptoms. Mean duration of treatment was 279 days (sd = 208, CI 254 to 262).

### Interpretation of results

Multinomial Logistic Regression analysis of the variables showed a significant reduction of 24 hr frequency, urgency symptoms, voiding symptoms (Fig 1), pain and Log pyuria count both at review visit and at the end of the study.

**Fig 1. Resolution of Obstructive Voiding symptoms on antibiotic treatment in patients with LUTS**



### Concluding message

Voiding symptoms in women are very sensitive and important markers of infection. This proof of concept observational study clearly demonstrated that voiding symptoms in neurologically and anatomically intact women are indicators of undiagnosed chronic urinary tract infection. We need to reappraise our approach to women presenting with voiding symptoms and thereby avoid performing unnecessary surgical procedures (2,3).

### References

1. Gill.K et al. ICS Abstract 2011
2. Eur Urol Suppl 2008; 7:238
3. Int J Clin Pract 2006; 60:1263–71

### Disclosures

**Funding:** Nil **Clinical Trial:** No **Subjects:** HUMAN **Ethics Committee:** Approved by East London & the City REC, Reference No: 07/H074/74 **Helsinki:** Yes **Informed Consent:** Yes