

Evidence of bladder oversensitivity in the absence of an infection in premenopausal women with a history of recurrent urinary tract infections

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Study Type – Prevalence (case control)
Level of Evidence 4

OBJECTIVE

- To compare the mean voided volume and bladder sensation during filling cystometry in women with a history of recurrent urinary tract infection (UTI) and controls.

PATIENTS AND METHODS

- This was a case-control study including adult women seen in the urogynaecology clinic.
- The cases were 49 women with at least three documented positive urine cultures >105 colonies/mL in the previous 12 months and no active infection at the time of data collection.
- Controls were 53 women with stress urinary incontinence and no history of recurrent UTI or coexistent urge urinary incontinence.
- We compared bladder diary variables and filling cystometry data in the absence of an active infection.

RESULTS

- There was no significant difference in the median age, parity and body mass

What's known on the subject? and What does the study add?

Urinary tract infections (UTIs) have been implicated in the aetiology of interstitial cystitis/painful bladder syndrome (IC/PBS). Prior studies have described symptoms and laboratory tests suggestive of UTI at the onset of IC/PBS as well as a significant history of childhood recurrent UTIs. However, the mechanism by which recurrent UTIs contribute to the development of IC/PBS is not clear.

Our study shows that women with recurrent UTI suffer from bladder oversensitivity. Our findings have useful clinical implications. Women with bladder oversensitivity complain of urinary frequency which is often misdiagnosed as an infection and treated with unnecessary antibiotics. Additionally, there are no effective therapies for bladder oversensitivity. Therefore, women with recurrent UTI should undergo prompt evaluation and treatment of episodes of infection to prevent the development of bladder oversensitivity. Our findings also provide a possible mechanism for the development of IC/PBS. Whether women with recurrent UTI are at increased risk for developing IC/PBS in the future will need to be confirmed in future studies.

index of women with a history of recurrent UTI and controls.

- The median number of voids per day and median number of voids per litre of fluid intake was significantly greater in women with recurrent UTI than controls (12 vs 7 voids/day and 6 vs 4 voids/L, $P = 0.005$ and $P = 0.004$ respectively).
- The median average voided volume was significantly lower in women with recurrent UTI than controls (155 vs 195 mL, $P = 0.008$).
- On filling cystometry, median volumes of strong desire to void and maximum cystometric capacity were significantly

lower in women with recurrent UTI than controls (all $P < 0.05$).

CONCLUSION

- In the absence of an infection, premenopausal women with a history of recurrent UTI have significantly greater urinary frequency, lower average voided volume and a lower threshold of bladder sensitivity than controls.

KEYWORDS

bladder sensation, urgency, urinary tract infections, bladder diary, cystometry

INTRODUCTION

UTIs have been implicated in the aetiology of interstitial cystitis/painful bladder

syndrome (IC/PBS) [1–3]. Prior studies have described symptoms and laboratory tests suggestive of UTI at the onset of IC/PBS [1,2] as well as a significant history of

childhood recurrent UTIs [4]. However, the mechanism by which recurrent UTIs contribute to the development of IC/PBS is not clear.