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WHY WOMEN WITH REFRACTORY OVERACTIVE BLADDER (OAB) SYMPTOMS MUST UNDERGO CYSTOSCOPY AND BLADDER BIOPSY

Hypothesis / aims of study

There is some evidence showing that cystitis might play a role in the pathogenesis of overactive bladder symptoms (OAB) and detrusor overactivity (DO) and recently, animal studies have also demonstrated that tolterodine produced no effect on detrusor overactivity in rats with chronic chemical cystitis compared to the sham group.

Cystoscopy is a useful tool to evaluate urethral and vesical pathology, such as stricture/stenosis, diverticulum, cancer, and cystitis that can clinically present with OAB. However, it is still not clear if an underlying pathology may be missed if bladder biopsy is not performed. Therefore, the role of cystoscopy and bladder biopsy in the assessment of women with refractory OAB symptoms is still controversial to date.

The aim of this study was to evaluate the diagnostic accuracy of cystoscopy and the clinical value of bladder biopsy in the assessment of women with non-neurogenic OAB symptoms refractory to anticholinergics.

Study design, materials and methods

Women with lower urinary tract symptoms (LUTS) were recruited from an urogynaecology outpatient clinic of a tertiary referral teaching hospital. All women were studied with vaginal examination using a pelvic organ prolapse quantification system (POP-Q), bladder diary, urinalysis, Kings Health questionnaire, urodynamics, pelvic and kidney-ureter-bladder ultrasound scans as per unit protocol. Only women with OAB symptoms and urodynamic diagnosis of detrusor overactivity resistant to conservative management (e.g. lifestyle change, bladder retraining, and physiotherapy) and two or more anticholinergics were included in the study.

Urinalysis and MSU were sent off for all women. Women with urinary tract infection (UTI), pelvic organ prolapse ≥ 2 and/or neurological diseases were excluded. All women were further investigated with a rigid cystoscopy, hydro distension and bladder biopsy under general anaesthesia to rule out interstitial cystitis. Standardised criteria for histopathological diagnoses were used as previously described. The findings on histology reports included presence of chronic or active cystitis, lymphoid follicles, cystitis cystica, glandular cystitis, interstitial cystitis, von Brunn's nests, and tumour. Both cystoscopy and histological findings were compared to assess the sensitivity, specificity, positive predictive value (PPV) and negative predictive value (NPV) of cystoscopy findings for chronic cystitis.

Results

One hundred and six women aged 22-91 years were studied. Histopathology showed chronic cystitis in 94 women, follicular cystitis in 3, acute and chronic cystitis in 2, transitional cell carcinoma in 6 and no abnormality in 1 woman.

Trabeculations and increased vascularity were the most common cystoscopy findings seen in 71% and 72% of women respectively. On cystoscopy haemorrhages were seen in 11 women (10.4%) on first filling and 15 women (14%) on refilling respectively. Seven women had space-occupying lesion on cystoscopy which was confirmed to be a bladder tumour only in 71% of the cases (5/7). One woman out of six, who was diagnosed with bladder tumour, did not have space-occupying lesion when cystoscopy was performed. A total of 6 women presented haematuria. However histology confirmed a bladder tumour only in 33% of these cases (2/6) whereas 67% (4/6) of women with bladder tumour did not have haematuria.

The comparison of cystoscopy and histology findings is shown in Table 1.

The sensitivity, specificity, positive predictive value (PPV) and negative predictive value (NPV) of cystoscopy findings for chronic cystitis are shown in Table 2.

Table 1: Comparison of cystoscopy and histology findings.

Cystoscopy findings	**Histology findings**							
	Active cystitis	Chronic cystitis	Lymphoid follicles	Cystitis cystica	Glandular cystitis	von Brunn's nests	Tumour	IC
Trabeculation	1	62	5	3	1	3	0	2
Increased vascularity	1	62	5	2	0	0	2	2
Haemorrhages on first filling	0	9	4	0	0	1	0	2
Haemorrhages on refilling	0	12	3	0	0	0	0	2
Space-occupying lesion	0	3	0	0	0	2	5	2
Haematuria	1	3	1	0	0	0	2	0

IC = interstitial cystitis. Values are expressed as numbers.

Table 2: Sensitivity, specificity, positive predictive value (PPV) and negative predictive value (NPV) of cystoscopic findings for chronic cystitis

	Sensitivity	Specificity	Positive predictive value	Negative predictive value
Trabeculation	77.5	55.6	88.5	35.7
Increased vascularity	77.5	50	87.3	33.3
Haemorrhages on first filling	11.2	88.9	81.8	18.4
Haemorrhages on refilling	15	83.3	80	18.1

Values are expressed as percentage.

Interpretation of results

More than 90% of women with refractory OAB symptoms have chronic cystitis on histopathology thus we can speculate that antibiotic/anti-inflammatory therapy in those women might be beneficial prior to starting anticholinergics. However further larger randomised controlled trials are mandatory to confirm our hypothesis.

Concluding message

In the urogynaecology setting, cystoscopy is a useful, but not always adequate, tool in the assessment of women with refractory OAB symptoms. Bladder biopsy might be helpful in these cases as it may reveal a benign or malignant pathology which might be missed by cystoscopy alone, thus potentially impacting their management. Larger studies that report values for sensitivity, specificity, PPV and NPV of cystoscopic findings for cystitis need to be done in order to confirm our data providing precise criteria for when a biopsy is indicated.

Disclosures

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