

## LONG TERM ANTIBIOTIC THERAPY IN THE MANAGEMENT OF WOMEN WITH OVERACTIVE BLADDER UNRESPONSIVE TO ANTICHOLINERGICS

### Hypothesis / aims of study

Overactive bladder (OAB) and Detrusor overactivity (DO) have a multi-factorial aetiology. Electron microscopy in rodent models demonstrates that *Escherichia coli* have the ability to invade the bladder epithelium and to mature into biofilms [1]. These biofilms create a chronic quiescent reservoir in the bladder, and serve as a source for recurrent cystitis in patients with non-infected urine. It has been also shown that fastidious organisms are usually not detected by routine urine culture methods, thus they may also contribute to a chronic subclinical infection if not treated. These data suggest that OAB can be the manifestation of chronic cystitis and thus seem to justify the use of antibiotics in patients with refractory DO and OAB.

Therefore the aim of our study was to evaluate the effects of antibiotic treatment in women with treatment resistant overactive bladder who are found to have histological diagnosis of cystitis.

### Study design, materials and methods

Women with OAB were recruited for this study if they matched three main criteria: 1) Failure to respond to two or more anticholinergics 2) Urodynamic confirmation of DO and 3) Cystoscopic appearances and bladder biopsy histology consistent with chronic cystitis. Following informed consent participants were treated with a six week course of rotational antibiotics. Women were requested to complete the patient perception of bladder condition questionnaire (PPBC) before and after treatment. Women were also requested to complete a visual analog scale (VAS) in order to assess the improvement of symptoms achieved after the six weeks course of rotational antibiotics. The PPBC scores were compared before and after treatment using Paired sample T test.

The changes in PPBC score from baseline to week six of antibiotic treatment were grouped as a 4 level magnitude of improvement variable: deterioration (difference in scores is positive), no change (difference in scores is 0), minor improvement (difference in scores is negative in magnitude of 1), and major improvement (difference in scores is negative in magnitude of 2 or more) as described earlier (2).

### Results

In total 63 patients with a mean age of 57(range18-96 years) were recruited into the study. Histology of the bladder biopsies showed mild chronic cystitis in 70%, moderate chronic cystitis in 25% and severe chronic cystitis in 5% of cases.

There was a statistical significant difference in the mean PPBC scores pre and post six weeks of antibiotic treatment. (Table 1)

	Mean score (+/-Std. deviation)	P value
PPBC pre antibiotics	4.49(+/-0.62)	0.000
PPBC post antibiotics	2.17(+/-1.420)	

Table 1

The magnitude of improvement in PPBC after antibiotics therapy is as shown in table 2

Magnitude of Improvement in PPBC	Percentage
No change = score of 0	9.5%
Minor improvement = score of -1	19%
Major improvement =score of -2 or more	71.5%

Table 2

Following the six weeks course of rotational antibiotics, the patients reported a overall 60% improvement of their OAB symptoms.

### Interpretation of results

Our study shows a statistical significant improvement in patient's subjective assessment of PPBC after antibiotic treatment in women with treatment resistant overactive bladder. Subclinical chronic infection may play a role in the pathogenesis of overactive bladder

### Concluding message

In women with treatment resistant overactive bladder symptoms, treatment of chronic subclinical infection should be considered.

#### References

1. Scienze.2003 Jul 4; 301 (5629):105-7
2. Eur Urol. 2006 Jun;49(6):1079-86

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<i>Is this a clinical trial?</i>	No
<i>What were the subjects in the study?</i>	HUMAN
<i>Was this study approved by an ethics committee?</i>	No
<i>This study did not require ethics committee approval because</i>	No required
<i>Was the Declaration of Helsinki followed?</i>	Yes
<i>Was informed consent obtained from the patients?</i>	Yes