719

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ANTICHOLINERGIC THERAPY – DOES IT WORK THROUGH THE MOTOR OR SENSORY ROUTE?

Hypothesis / aims of study

Idiopathic detrusor overactivity has an unknown aetiology. There are two main theories for this disorder one being myogenic and the other being altered bladder sensation (1). The activity of the muscle can be assessed by measuring the bladder wall thickness (BWT) using transvaginal ultrasound in women and the sensory aspects can be graded with a visual analogue scale measuring urgency. It is unknown how the anticholinergic drugs work to treat detrusor overactivity. If they act through the motor route a change in BWT will be measured first and if it is sensory led then the VAS will change first.

The aim of the study is to determine whether the bladder wall thickness or the measurement of urgency is altered by anticholinergic treatment.

Study design, materials and methods

Women with symptoms of the overactive bladder syndrome, with confirmed urodynamic diagnosis of detrusor overactivity and a mean BWT of 5mm or more were recruited to the study (2). The patient perception of bladder condition (PPBC) is a single item validated tool with a six point scale that measures the impact of bladder related problems on the patient's life (3). The visual analogue scale (VAS) for urgency is a tool which allows women to indicate the severity of their urgency along a scale from 1 to 10. At the first visit each woman completed the PPBC and were asked to mark the degree of urgency they experienced on a visual analogue scale (VAS). The women were then commenced on anticholinergic treatment which consisted of either tolterodine extended release, solifenacin, or oxybutynin XL.

Women were further seen after one, two, six and 12 weeks of treatment. At each visit they underwent an ultrasound scan for mean BWT and completed the PPBC and VAS. Women were withdrawn from the study if they discontinued anticholinergic therapy, but were included if they changed onto an alternative

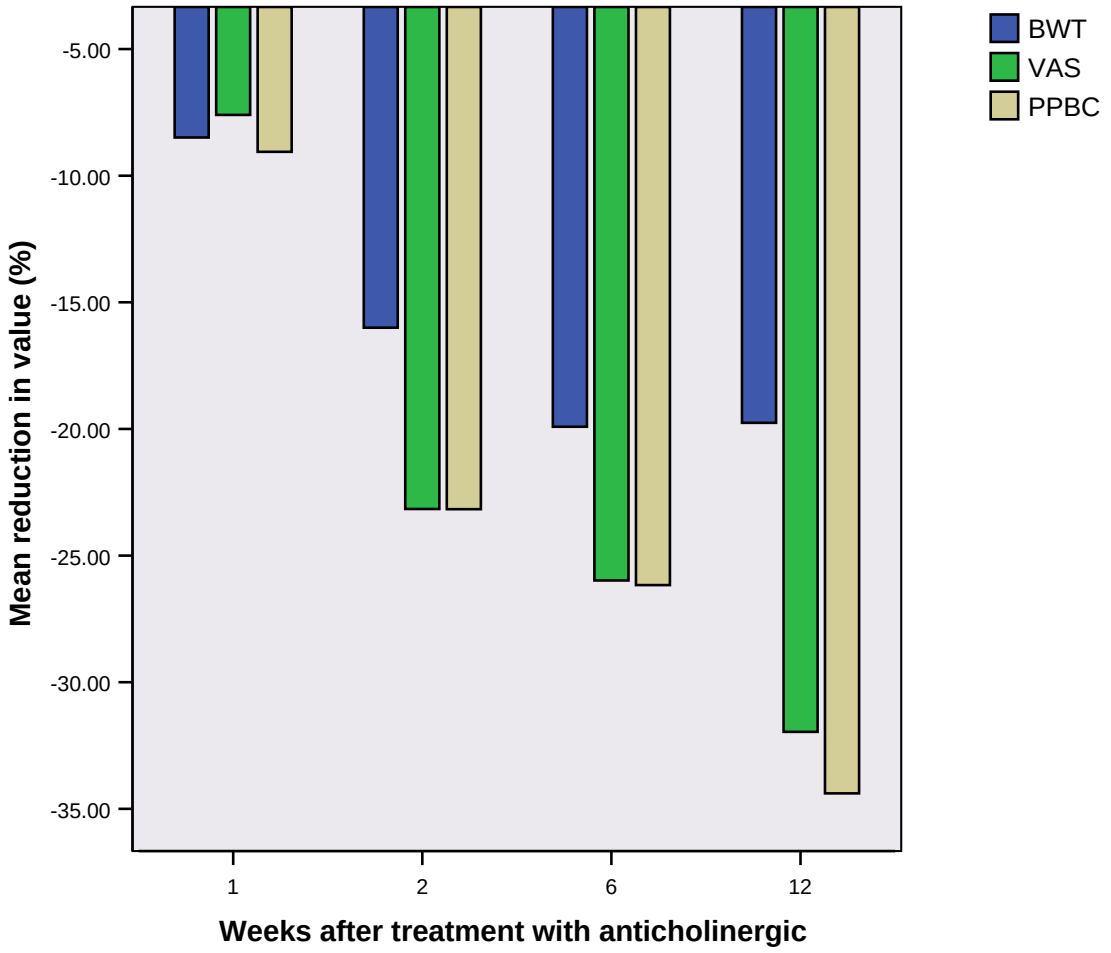
Results

Thirty women completed 12 weeks of anticholinergic therapy (solifenacin n=17, tolterodine XL n=10, oxybutynin XL n=3) the PPBC, VAS and had mean BWT measured. Compared to the pre-treatment values, there was a reduction in mean BWT, PPBC and VAS scores until week 6 of treatment ($p<0.001$, Friedman test). The improvement in PPBC and VAS continued from week 6 to week 12 ($p<0.001$, Friedman test). However, the mean BWT was unchanged from week 6 to 12.

Table1: relationship between mean BWT, PPBC and VAS scores at all visits ($p<0.001$, Chi Sq test)

	Mean PPBC score (95% CI)	Mean VAS (95% CI)
Mean BWT >5mm (n=76)	4.2 (4.1-4.4)	6.1 (5.8-6.4)
Mean BWT <5mm (n=74)	2.9 (2.7-3.1)	3.7 (3.5-4.00)

Figure 1 Percentage reduction in bladder wall thickness, VAS and PPBC scores over the duration of anticholinergic therapy



Interpretation of results

Bladder wall thickness is significantly reduced with anticholinergic therapy in the first 6 weeks of anticholinergic therapy as did the VAS to urgency. However the perception of bladder condition and VAS for urgency continued to improve after 6 weeks even though there was no further change in the bladder wall thickness. This suggests that anticholinergics act via the sensory pathway. Overall an elevated bladder wall thickness was linked with higher severity of urgency and a raised PPBC score.

Conclusions

Anticholinergic therapy appears to act through the sensory route as the improvement in the perception of bladder condition is linked to urgency rather than the reduction in the bladder wall thickness.

References

1. BJU Int. 2006 Sep;98(3):503-7
2. Br J Obstet Gynaecol. 1996 Sep;103(9):904-8
3. Eur Urol. 2006 Jun;49(6):1079-86

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Was this study approved by an ethics committee?	**Yes**
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Was the Declaration of Helsinki followed?	**Yes**
Was informed consent obtained from the patients?	**Yes**