

THE EFFECT OF ANTICHOLINERGIC THERAPY ON MIXED URINARY INCONTINENCE

Aims of Study

Mixed urinary incontinence is a difficult diagnosis to treat as there are 2 distinct methods of treatment suggested in the literature. Firstly it has been suggested that medical treatment for detrusor instability can be prescribed for this part of the diagnosis then the patients can be reassessed on treatment to determine any remaining symptoms. Secondly continence surgery has been proposed particularly where the patient has stress incontinent symptoms. The literature is contradictory about the results of such surgery as some papers suggest good cures of the stress incontinence with 50% of the patients being cured also of their detrusor instability, others suggest this only occurs if the longest suffered symptom is that of stress incontinence.

This study attempts to determine the changes which occur to the urethral outflow mechanism by measuring opening pressures during voiding and relate these to changes in urodynamic diagnosis while the women are treated with an anticholinergic drug.

Methods

Women with urinary symptoms were recruited from the urogynaecology clinic who had urodynamically proven detrusor instability with urethral sphincter incompetence during the provocative phase of the urodynamic test. For the urodynamic test all the women attended with a full bladder and initially voided on a flowmeter. The women were then catheterised with a 12F catheter and fluid filled lines inserted into the rectum and bladder. Urodynamics was then performed filling the bladder at 100 mls/min with room temperature radio-opaque contrast. The degree of urethral sphincter incompetence was classified according to whether the woman had leaked with every cough (severe), leaked with most coughs (moderate), leaked with less than 2 coughs (mild) or did not leak on coughing (none). The women were then started on Tolterodine 2mg twice daily for four weeks then for the last two weeks the women were asked to increase the Tolterodine to 2mg three times a day. The urodynamic test was then repeated as described for the first test. The opening and closure detrusor pressure readings were taken from the urodynamic traces with a 0.7 second delay for the beginning and cessation of urinary flow to take account of the time taken for urine to reach the flowmeter from the urethra. The figures obtained were analysed with the Wilcoxon Signed Rank test (SPSS inc, Chicago, USA).

Results

Thirty three women were recruited into the study. The women appeared to tolerate the Tolterodine 2mg three times a day well with 33% of the women stating they had a very dry mouth. One woman could not stay on the higher dose and reduced it to 2mg twice daily.

Urodynamic Parameters	Urodynamic test before anticholinergics	Urodynamic test on anticholinergics	Wilcoxon signed rank test, Z value, p Significant*
Opening detrusor pressure (Median, sd)	28.5 (10.1)	24.0 (9.0)	3.778, p = 0.001*
Closure detrusor pressure (Median, sd)	22.0 (18.5)	21.5 (9.1)	1.070, p = 0.28
Post void urinary residual (Mean, sd)	18 ml (44)	22 ml (44)	-1.110, p = 0.27

Table 1: Urodynamic parameters of women before and after anticholinergic therapy

There was a significant reduction in the opening detrusor pressure of the women with mixed incontinence when they were treated with an anticholinergic drug. There was no significant increase in urinary residual.

This reduction in opening pressure when taking anticholinergic drug therapy should indicate that the women during the second urodynamic test on provocation should have more severe leakage. During this study it was found that the women had less severe urinary leakage with 25 having moderate and severe leakage of the 33 women having leakage on coughing prior to treatment. After anticholinergic treatment 19 had moderate or severe urinary leakage out of 27 women having urinary leakage on treatment and 6 women had no leakage on provocation.

Urethral Sphincter Incompetence	None	Mild	Moderate	Severe
Before Anticholinergic Therapy	0	8	8	17
After Anticholinergic Therapy	6	8	8	11

Table 2: Severity of urinary leakage on provocation before and after anticholinergic therapy

Conclusions

Anticholinergic treatment of women with mixed urinary incontinence leads to a reduction in the urethral opening pressure and conversely these women have less urinary leakage on coughing. This suggests the reason why some women with mixed incontinence leak on provocation is not related to sphincter weakness but maybe related to detrusor instability which is treated with the anticholinergic drug. This indicates that drug therapy should be first line in the treatment of women with mixed urinary incontinence.