

## **A RANDOMISED CONTROLLED TRIAL OF PELVIC FLOOR EXERCISES FOR POST-MICTURITION DRIBBLE IN MEN WITH ERECTILE DYSFUNCTION.**

### **Hypothesis / aims of study**

Post-micturition dribble describes an involuntary loss of urine immediately after leaving the toilet and should be distinguished from terminal dribble which describes a prolonged final part of micturition when the flow has slowed to a trickle/dribble.

The bulbocavernosus muscle has three functions. It is active during penile erection, it pumps the ejaculate, and it eliminates urine from the bulbar portion of the urethra after the completion of micturition.

It was therefore hypothesised that bulbocavernosus muscle weakness would contribute to both loss of erectile function and also to loss of the bulbocavernosus reflex which empties the bulbar urethra after the completion of voiding. It was hypothesised that strengthening the bulbocavernosus muscle along with the pelvic floor muscles would restore erectile function and that functional use of these muscles could replace the post-void reflex which empties the bulbar urethra in normal men.

The aim of this study was to compare an intervention group receiving pelvic floor muscle exercises, manometric biofeedback and lifestyle changes with a control group receiving lifestyle changes only in men with post-micturition dribble and erectile dysfunction.

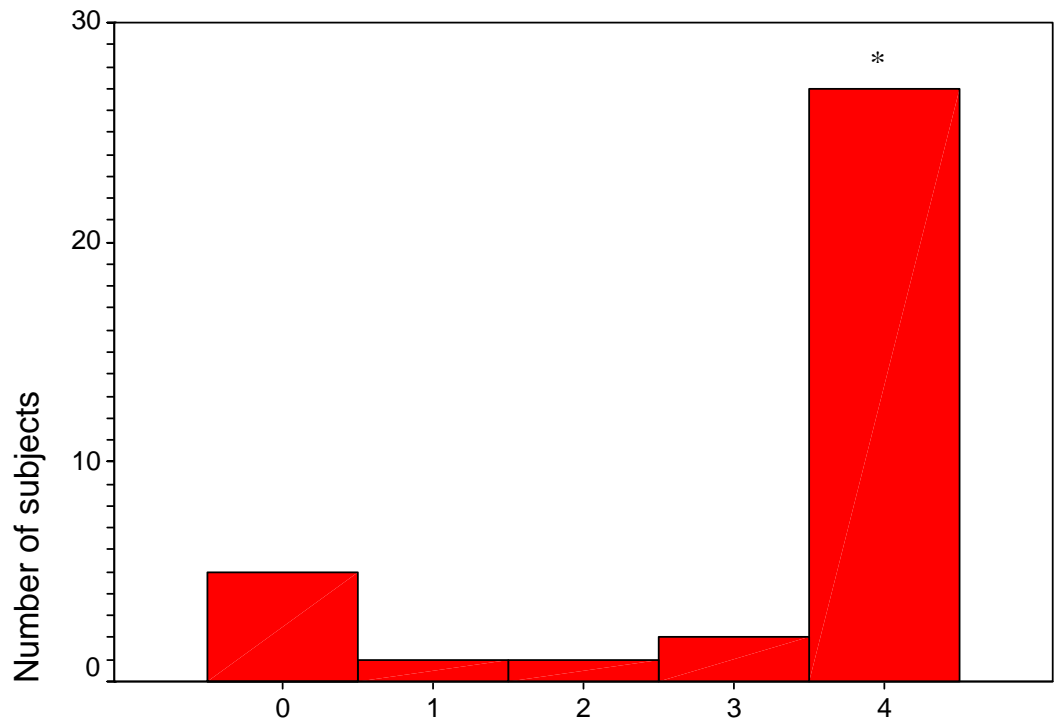
### **Study design, materials and methods**

Ethical approval was gained for the trial. Men were included if they had experienced erectile dysfunction for 6 months or more (mean duration 72 months; range 6-360 months). Men were excluded if they had undergone a radical prostatectomy or had neurological impairment. Fifty-five men with erectile dysfunction (median age 59.2 years; range 22-78) were enrolled from a local urology clinic. Twenty-eight subjects were randomised to an intervention group and received pelvic floor muscle exercises including a strong post-void 'Squeeze out' pelvic floor muscle contraction, biofeedback and suggestions for lifestyle changes. Men in the intervention group were instructed to gain a penile retraction and scrotal lift during each muscle contraction. Twenty-seven controls were solely advised on lifestyle changes. Lifestyle changes included advice on reducing alcohol levels, stopping smoking, weight reduction, getting fit, and avoiding saddle pressure when cycling. After 3 months of lifestyle changes, the control group received pelvic floor muscle exercises and biofeedback. Both groups were followed up following a further 3 months of home pelvic floor muscle exercises. The post-micturition dribble status, erectile function domain of the International Index of Erectile Function, anal manometry and digital anal muscle grade were assessed at baseline, 3 and 6 months in both groups. An independent assessor who was blinded to the grouping assessed the post-micturition dribble status and erectile function of subjects in both groups at 3 and 6 months. Data was analysed using appropriate tests.

### **Results**

Thirty-six (65.5%) subjects reported post-micturition dribble at baseline. Of these, 21 subjects were randomised into the intervention group and 15 into the control group. There was significant reduction in post-micturition dribble after intervention ( $p < 0.001$ ) compared to the controls ( $p = 0.102$ ) using a Wilcoxon test. In both groups combined, after 3 months of pelvic floor muscle exercises and 3 months of home exercises, 27 (75%) subjects became asymptomatic of post-micturition dribble, 3 (8.3%) improved, and 5 (13.9%) dropped out. One (2.8%) subject still reported post-micturition dribble. Post-micturition dribble was not correlated to age, erectile function, anal manometric pressure or digital anal muscle grade.

At 3 months, erectile function in the intervention group was significantly improved compared to the control group ( $p = 0.001$ ) using a Mann-Whitney independent samples test. After 6 months of pelvic floor muscle exercises, the blind assessment showed that 22 (40%) subjects regained normal erectile function, 19 (34.5%) improved and 14 (25.5%) failed to improve.



Outcomes of treatment for post-micturition-dribble

0 = drop outs 1 = PMD 2 = less amount 3 = less often 4 = no PMD

\* denotes significance (p=0.001)

### Bar chart showing post-micturition dribble outcomes after pelvic floor exercises

#### Interpretation of results

The percentage of subjects with erectile dysfunction who experienced true post-micturition dribble (65.5%) was greater than in a study for men with a similar age range (26.9%)(1). Other prevalence studies have included terminal dribble. Bulbocavernosus muscle dysfunction may provide an association between post-micturition dribble and erectile dysfunction. The pelvic floor muscle exercise regime included functional bulbocavernosus muscle activity to replace the normal bulbocavernosus reflex at the completion of voiding. This novel functional pelvic floor muscle 'Squeeze out' contraction eliminated a few drops of urine whilst subjects were poised over the toilet and should be used in preference to milking the bulbar urethra as in 'bulbar urethral massage'(2).

Pelvic floor muscle exercises should be used as a first line treatment for men with erectile dysfunction. Men receiving other treatments for erectile dysfunction could be instructed to perform pelvic floor muscle exercises.

#### Concluding message

Pelvic floor muscle exercises including a post-void 'Squeeze out' pelvic floor muscle contraction are an effective treatment for both post-micturition dribble and erectile dysfunction.

#### References

1 (1997) [Incidence of post-micturition dribble in adult males in their twenties through fifties] *Acta Urologica Japonica* 43 (6): 407-10 (English Abstract)

2 (1997) Pelvic floor exercises as a treatment for post-micturition dribble *British Journal of Urology* 79:892-897