

A DOUBLE BLIND, RANDOMISED, PLACEBO CONTROLLED, CROSSOVER STUDY OF SILDENAFIL CITRATE (VIAGRA), IN PATIENTS SUFFERING FROM OBSTRUCTIVE VOIDING OR RETENTION ASSOCIATED WITH THE PRIMARY DISORDER OF SPHINCTER RELAXATION

Hypothesis / aims of study

Patients with the primary disorder of sphincter relaxation find it difficult to void due to a non-relaxing sphincter generating a high urethral pressure (1). Recent studies in the literature have identified nitric oxide synthase in the female urethral sphincter (2). Nitric Oxide donors have been used in detrusor sphincter dyssynergia with decrease in external urethral sphincter pressures (3).

The aim of our study was to determine if sildenafil citrate, which increases intracellular cGMP, could improve sphincter relaxation and thereby increase flow-rates and improve bladder emptying.

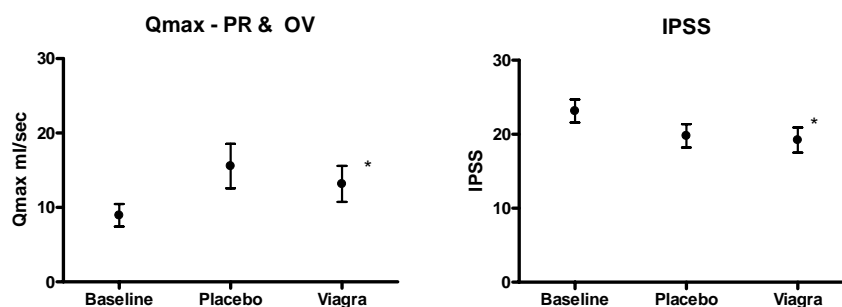
Study design, materials and methods

Local Ethical approval was obtained. 20 female patients with complete retention (5), partial retention or obstructed voiding (15) with a Q_{max} of less than 15 ml/sec and an elevated maximum urethral closure pressure and urethral sphincter volume were included in the study.

The trial design was a double blind, randomised, placebo control, crossover study. The patients were in each phase for 1 month. The active drug was sildenafil citrate 50mg twice a day. Patient underwent flow rates and ultrasound estimation or in/out catheter to determine residual volume. Measurements were performed at baseline and following 1 month of placebo and 1 month of sildenafil. Blood pressure and side effect monitoring were performed at each visit. Voiding diaries, International Prostate Symptom Score (IPSS) and Quality of Life scores were collected during each phase.

Results

No statistical significant difference was seen in any voiding parameters when sildenafil citrate was compared to placebo. In the subgroup with partial retention and obstructed voiding (15/20), there was a statistical significant difference in Q_{max} ($p = 0.0245$) and IPSS score ($p = 0.0215$) between sildenafil and baseline but not when compared to placebo.



5 patients experienced mild dyspepsia and 4 patients had headaches during active medication. 2 patients withdrew, one was on placebo.

Interpretation of results

Patients with partial retention or obstructed voiding (15/20) on sildenafil citrate therapy had increases in flow (Qmax) when compared to baseline which was associated with a decrease in IPSS score, however this was not significantly different to the placebo arm. Patient with complete retention were not affected by placebo or sildenafil. Patient tolerated the sildenafil well with side-effects of dyspepsia & headache in a quarter of the patients in the trial.

Concluding message

This is the first study to look at sildenafil citrate, a nitric oxide potentiator in obstructed voiding or retention in women. Although there were clinical improvements when compared to baseline, there was no difference when compared to placebo.

References

1. Maximum urethral closure pressure and sphincter volume in women with urinary retention. J Urol, 167: 1348, 2002
2. Expression of nitric oxide synthase immunoreactivity in the human female intramural striated urethral sphincter. J Urol, 169: 2407, 2003.
3. Oral nitric oxide donors: a new pharmacological approach to detrusor-sphincter dyssynergia in spinal cord injured patients? Eur Urol, 45: 516, 2004.

FUNDING: Educational Grant from Pfizer