Case Report

Received: April 17, 1984

Accepted: April 18, 1984

Urol. int. 1984;39:241-242

Phenoxybenzamine in Prostatic Obstruction

D.J.		Griffiths ^{a,b}
F.H.		Schröder ^a

Departments of ^aUrology and ^bBiological and Medical Physics, Erasmus University, Rotterdam, The Netherlands

Key Words

Phenoxybenzamine
Dibenyline
Benign prostatic hypertrophy
Urethral obstruction
Prostatic plateau pressure

Abstract

A short controlled trial has confirmed that phenoxybenzamine (10 or 20 mg/day) relaxes the resting proximal urethra and reduces the voiding frequency in patients with benign prostatic hypertrophy.

D.J. Griffiths, Erasmus University Rotterdam, PO Box 1738, NL-3000 DR Rotterdam (The Netherlands)

In this short report some results are summarized of a double-blind, randomized trial of phenoxybenzamine in men with benign prostatic hypertrophy. The trial was terminated prematurely on the advice of the manufacturer.

Materials and Method

20 patients entered the trial after selection according to the following criteria: informed consent, age 45 years or over, symptoms typical of BPH, an enlarged prostate on rectal examination, a free flow curve with a maximum flow rate below 10 ml/s for a voided volume of 100 ml or more (or an obstructive flow pattern for a smaller voided volume), and residual urine of more than a few milliliters (e.g. as estimated on IVU). 16 patients (mean age 62 years) completed the first 4 weeks of the trial before it was ended. During this period they received 2 capsules/day of phenoxybenzamine and/or placebo. 4 patients received a dose of 20 mg phenoxybenzamine/day, 6 patients received 10 mg/day and 6 patients 0 mg/day. All patients underwent extensive video-urodynamic testing before and after the 4 weeks of treatment. Voiding frequency was assessed from a diary card kept during the pretrial week and weeks 2 and 4.

The selection criteria, although suggestive of obstruction due to BPH, do not establish it firmly. In the subsequent video-urodynamic examinations, 13 of the 16 patients were found to have some degree of prostatic obstruction as judged by repeated pressure/flow plots [Abrams and Griffiths, 1979]. 3 patients were urodynamically unobstructed; when the code was broken they were found to have received 0, 10 and 20 mg phenoxybenzamine/day, respectively.

Results

Side Effects

None of the patients receiving placebo complained of side effects such as impotence, dizziness or nasal stuffiness. All but 3 of those receiving the active drug reported such side effects. This difference is statistically significant ($p < 2.5\%$).

Symptoms

After 4 weeks of treatment all but 2 of the patients reported symptomatic improvement. The 2 exceptions had received 0 and 20 mg/day, respectively. Clearly there are here no significant differences, but a strong placebo effect.

Voiding Frequency

In the group receiving 10 mg/day there was a significant decrease ($p < 5\%$) in the mean nightly voiding frequency, from 2.0 pretrial to 1.2 in week 4. In this group the decreases in daily frequency in weeks 2 and 4 just failed to attain significance at the 5% level. No other significant differences were observed.

Objective Measurements

No significant differences between the changes observed in the placebo and active drug groups were found for the following variables: prostatic volume (measured

242

Griffiths/Schroeder

by ultrasound [Schlatmann et al., 1979]), maximum free flow rate (whether or not corrected for initial bladder volume by the method of Siroky et al. [1979]), residual urine (whether after free flow or after pressure/flow voiding study), time for the descending leg of the free flow curve [Rollema, 1981], maximum flow rate or detrusor pressure at maximum flow in voiding study, minimum urethral resistance factor, bladder power at maximum flow. Among those receiving the active drug there was however a reduction in the prostatic plateau pressure [Abrams et al., 1982] as measured in the urethral closure pressure profile by a perfusion method. In the active drug group as a whole the median change in plateau pressure during drug treatment was -3 cm H₂O (range -7 to +4 cm H₂O), while in the placebo group the median change was +5 cm H₂O (range -1 to +7 cm H₂O, excluding a technical failure in 1 patient). This difference just attains significance (U-test, $p < 5\%$). The effect of the drug appears to be dose-related, since for those receiving 10 mg/day the median change in plateau pressure was 0 cm H₂O (range -4 to +4 cm H₂O), while for those on 20 mg/day it was -5 cm H₂O (range -7 to 0 cm H₂O).

Conclusion

These results confirm previous reports [Gerstenberg et al., 1980; Abrams et al., 1982] that in patients with BPH phenoxybenzamine relaxes the resting proximal urethra without significantly affecting the size of the prostate. Any objective effect on micturition was too small to be detected in this trial, but 10 mg/day phenoxybenzamine reduced the voiding frequency, even though it has been suggested that this dosage is ineffective in treating benign prostatic hypertrophy [Brooks et al., 1983]. Subjectively, no effect of the drug on symptoms was detected, over and above a large placebo effect, but phenoxybenzamine produced side effects much more frequently than placebo.

Acknowledgments

We are grateful to Smith, Kline & French BV for supplying phenoxybenzamine and matching placebo capsules and for financial and organizational support, and to nurse J.E. Bos for help with urodynamic investigations and organization. Urology residents J.H.M. Blom, E.A.J.M. deJong, J.H. Vriesde and J.G. de Wall helped with the investigations.

References

Abrams, P.H.; Griffiths, D.J.: The assessment of prostatic obstruction from urodynamic measurements and from residual urine. *Br. J. Urol.* 57: 129–134(1979).

Abrams, P.H.; Shah, P.J.R.; Stone, R.; Choa, R.G.: Bladder outflow obstruction treated with phenoxybenzamine. *Br. J. Urol.* 54: 527–530 (1982).

Brooks, M.E.; Sidi, A.A.; Hanani, Y.; Braf, Z.: Ineffectiveness of phenoxybenzamine in treatment of benign prostatic hypertrophy. A controlled study. *Urology* 21: 474–478 (1983).

Gerstenberg, T.; Blaabjerg, J.; Nielsen, M.L.; Clausen, S.: Phenoxybenzamine reduces bladder outlet obstruction in benign prostatic hyperplasia. *Investve Urol.* 18: 29–31 (1980).

Rollema, H.J.: Uroflowmetry in males: reference values and clinical application in benign prostatic hypertrophy; thesis Groningen (1981).

Schlatmann, T.J.M.; Carpentier, P.J.; Schroder, F.H.: Transrektaler Ultraschall und CT-Scan bei der Grössenbestimmung des Prosta-tadenoms und anderer Tumoren des kleinen Beckens. *Verh. dt. Ges. Urol.* 31: 515–517 (1979).

Siroky, M.B.; Olsson, C.A.; Krane, R.J.: The flow rate nomogram 1. Development. *J. Urol.* 122: 665–668 (1979).