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Acute Retention of Urine due to Benign Prostatic Obstruction Treated with Alpha-Adrenergic Blockers

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Key Words

Prostatic obstruction

Alpha-adrenergic blockers

Acute retention of urine

Abstract

Bladder catheterisation is the usual treatment in patients with acute retention of urine due to prostatic hypertrophy. The interference is not without complications why medical treatment would be a progress. The prostatic gland has been found to contain alpha-adrenergic receptors, and it has been argued that some cases of acute retention of urine is caused by over-stimulation of the alpha-adrenergic receptors. In the present study we have investigated the effect of intravenously administered phentolamine (Regitin®) in patients with acute retention of urine, due to prostatic hypertrophy, and find that the treatment is an alternative to conventional bladder catheterisation.

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Introduction Results

Acute retention of urine due to prostatic obstruction has as yet been treated with catheterisation. Bladder catheterisation, or an unsuccessful attempt too, may be followed by complications in form of a via falsa, bleeding or urinary infection. Medical treatment would therefore be a great progress. Caine et al. [2] found that quick-acting alpha-adrenergic blockers, given parenterally, were effective in the treatment of acute retention of urine due to benign prostatic obstruction. In 5 out of 8 men micturition was reestablished without the need for catheterisation. In the present study we have reexamined the results.

All patients were able to pass urine within few minutes after the injection. Between 100 and 400 ml was passed in one stream (table I). In 4 patients it was later necessary to empty the bladder by catheterisation. The remaining 4 patients were started on 5 mg phenoxybenzamine per-orally 6 h after the injection and continued with a daily

Table I. Effect of treatment with 10 mg phentolamine intravenously in 8 patients with acute retention of urine due to benign prostatic hypertrophy

Patient	Spontaneous	Residual urine, ml	Operation
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Patients and Methods

The study was based on patients with symptoms of prostatic hypertrophy who were admitted to the emergency department with their primary case of acute retention of urine. Excluded were patients with cerebral diseases, uncompensated heart disease, previous myo-cardial infarct, angina pectoris, peripheral vascular diseases and hypotension. Altogether 8 men (median age, 72

years; range, 60–84) attempted the study. After informed consent 10 mg phentolamine (Regitin®) was given intravenously. In order to prevent hypotension, an intravenous drop with isotonic saline solution was set. Puls and blood pressure was controlled before, just after, 5 and 15 min after the injection.

TVP = Transvesical prostatectomy; TURP = transurethral prostatectomy.

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dose of 5 + 10 mg phenoxybenzamine until operation. All patients were operated within 3 months and the 4 patients that was started on phenoxybenzamine had spontaneous urination until operation for benign prostatic hypertrophy.

After the injection of phentolamine the pulsfrequency increased 20–30%. 1 patient developed hypotension that was cured with 30° elevation of the legs. None of the other patients felt dislike.

Discussion

There has been much interest in recent years in the role played by the adrenergic receptors in the urinary tract. It has been suggested that certain cases of acute retention of urine in patients with benign hypertrophy of the prostate may be due to a sudden stimulation of the alpha-adrenergic receptors, causing an increase in tone of the smooth muscle tissue in the prostate and prostatic capsule, hence resulting in an increase in the closure pressure on the urethra [3].

Adrenergic neurones innervating the smooth muscle fibres in the human prostate was demonstrated by Baum-garten et al. [1] in 1968. Later Caine et al. [3] found that the prostatic capsule was extremely rich in alpha-adrenergic receptors, the prostatic adenoma moderately rich and the bladder neck region showed variable results, the maximal alpha-receptor response being in the region of the trigone.

Our study support the theory, that some cases of acute retention of urine in patients with benign hypertrophy of the prostate may be due to overstimulation of the alpha-adrenergic receptors [2, 3]. We conclude that treatment with alpha-adrenergic blockers is an alternative to conventional bladder catheterisation.

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