Transurethral alprostadil restored potency in impotent men


Objective
To evaluate the effectiveness of transurethral alprostadil (prostaglandin E1) in men with chronic organic erectile dysfunction.

Design
3-month randomized, double-blind, placebo-controlled trial.

Setting
58 centers in the United States.

Patients
1511 men (mean age 61 y) who were in a stable, monogamous, heterosexual relationship and were unable to achieve a spontaneous erection sufficient for intercourse within the past 3 months. Causes of dysfunction included vascular disease, diabetes, surgery, trauma, and other organic causes. Exclusion criteria were history of urethral stricture or obstruction, indwelling urethral catheter, anuria, penile implant or previous penile surgery, sickle cell disease, paraplegia or quadriplegia, congestive heart failure, unstable angina, recent myocardial infarction, poorly controlled diabetes mellitus, inadequately treated hypogonadism, abnormal blood test results, or receipt of investigational treatment in the past 30 days. Follow-up was 88%.

Intervention
All men meeting entry criteria self-administered transurethral alprostadil during as many as 4 clinic visits to determine an optimal dose in the clinic. 996 men (66%) had erections that were sufficient for intercourse and were allocated to home treatment with alprostadil (n = 485) at a titrated dose of 125 μg, 250 μg, 500 μg, or 1000 μg or placebo (n = 511).

Main outcome measures
Sexual intercourse, orgasm, comfort level, and adverse effects.

Main results
During the 3-month home-treatment period, more patients who received alprostadil than patients who received placebo reported having ≥1 occurrence of sexual intercourse (P < 0.001) (Table). Alprostadil also led to more patients having ≥1 orgasm (P < 0.001) (Table). Alprostadil administration was rated as comfortable or very comfortable by >60% of recipients. More patients who received alprostadil reported penile pain than those who received placebo (33% vs 3%, {P < 0.001}).

Conclusion
Transurethral alprostadil increased erections, sexual intercourse, and orgasms in men with chronic erectile dysfunction.

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*Numbers calculated from data in article.


Alprostadil vs placebo

<table>
<thead>
<tr>
<th>Outcomes at 3 mo</th>
<th>Alprostadil</th>
<th>Placebo</th>
<th>RBI (95% CI)</th>
<th>ABI (95% CI)</th>
<th>NNT (CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sexual intercourse</td>
<td>65%</td>
<td>19%</td>
<td>249% (188 to 325)</td>
<td>46%</td>
<td>(2 to 3)</td>
</tr>
<tr>
<td>≥1 orgasm</td>
<td>64%</td>
<td>24%</td>
<td>169% (127 to 221)</td>
<td>40%</td>
<td>(2 to 3)</td>
</tr>
</tbody>
</table>

Abbreviations defined in Glossary; RBI, ABI, NNT, and CI calculated from data in article.

Commentary
The study by Padma-Nathan and colleagues shows that transurethral alprostadil seems to work for many men with erectile dysfunction and has an acceptable level of side effects. Transurethral alprostadil joins revascularization procedures, penile prostheses, vacuum erection devices, and intracavernosal injections of vasoactive substances as a therapeutic option.

This and other trials have generally compared an active treatment of erectile dysfunction with placebo; for example, intracavernosal injections of alprostadil have also been shown to be efficacious and relatively safe (although patients can develop priapism or fibrosis) (1). What is needed now are trials that compare active strategies of treatment with a focus on patient-centered outcomes, including ease of use and satisfaction with the results.

Most treatments for erectile dysfunction tend to be invasive or require considerable education and motivation to use properly. An effective oral or topical therapy with acceptable side effects would be welcome. Yohimbine, a presynaptic α₂-adrenergic receptor blocker, has shown only limited efficacy (2). A small study has suggested a modest benefit of a topical mixture of 3 vasoactivators (3). Randomized trials of other oral agents, including the phosphodiesterase type 5 inhibitor sildenafil (4), are currently under way. At least until the final results of these studies are reported, transurethral alprostadil is an attractive therapeutic option.

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References