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A MULTICOMPONENT INTERVENTION FOR NOCTURIA IN MEN

Hypothesis / aims of study

Nocturia, waking at night from sleep to void, is a bothersome and common symptom. The benefit of single agent therapy may be limited as nocturia can be due to multiple conditions such as overactive bladder (OAB), benign prostatic hyperplasia (BPH), sleep disorders, peripheral edema, CHF, and/or conditions causing polyuria. The study aim was to evaluate the feasibility and effectiveness of an individualized, multicomponent intervention for nocturia in men.

Study design, materials and methods

Design: Open-label treatment trial

Setting and participants: Participants were men ≥50 years of age enrolled for care at a single U.S. Department of Veterans Affairs Medical Center. Following a mailed solicitation, subjects were invited to participate if they averaged ≥2 episodes per night over 3 days. Exclusion criteria included a urine peak flow of ≤4 mL/sec or a post void residual of ≥ 300 mL.

Intervention: Participants received behavioral interventions (fluid management, fluid limitation, sleep hygiene instructions, day time elevation of legs and compression stockings), medical condition management (improved control of diabetes mellitus or congestive heart failure), and specific drug treatment (terazosin for BPH, tolterodine for OAB, and a short acting sedative hypnotic- zaleplon- for difficulty returning to sleep following nocturia). Treatments were given based upon predetermined clinical criteria.

Measurements: Outcome measures were derived from 7 day sleep diaries and three day frequency volume charts, AUA-7 SI, and bother questions. Statistical analysis was performed using SPSS version 12.

Results

Of the 83 participants who came for evaluation, 55 completed the protocol; 21 were ineligible and 7 failed to return. Study completers mean age was 67; 56% were white and 44% were African-American. The drugs given on the basis of the treatment algorithm are shown in Table 1. Most participants (32/55; 58%) received one drug and 20% (11/55) received two drugs. The most commonly prescribed drug was terazosin (30/55, 54.5% of participants) with 25 participants on 10 mg, 3 participants on 5 mg, and 2 on 2 mg. Drugs were well tolerated except for terazosin, which caused dizziness and orthostasis. Only 2 individuals had therapy directed at achieving tighter control of diabetes; none had interventions on Congestive Heart Failure. Thirty-five of the 55 participants (62.5%) were prescribed compression stockings for daytime wear.

Mean self-reported nocturia at baseline was 3.3 episodes and 2.1 episodes at study completion (P<0.001). Bother from nocturia was reduced from 3.1 to 1.1 on a five-point scale (P<0.001), which represents a change from a *Medium* problem to a *Very Small* problem. Self-reported time to fall back asleep after awakenings to void totalled over 7 nights went from 4.2 hours to 3.4 hours (P=0.017). Participant ratings of sleep over a seven day period improved on some scales (long vs. short, interrupted vs. uninterrupted), but not on others (restless vs. restful, more alert at daytime vs. less).

Medication received was related to patient outcome. Although there was no effect of Zaleplon on the change in nocturia, there was a statistical interaction between Terazosin and Tolterodine, with patients who received both drugs showing the greatest reduction in nocturia (P=.019). This interaction was also present in the reduction of bother (P=.005). Zaleplon was effective at reducing bother, especially in patients who received it in concert with Tolterodine (P =.01).

Interpretation of results

This open-label, pilot trial of a multicomponent intervention showed reductions in nocturia, bother from nocturia, and time to fall asleep. Some subjective measures of sleep

quality were improved. Certain drug combinations showed positive interaction with respect to certain outcomes. It is important to note, however, that patients were not randomly assigned to drugs; rather, the medications received were determined based on case history.

Concluding message

The mean reduction in nocturia from this multicomponent approach to nocturia compares favourably to those in other published trials. While this study was designed to test the overall efficacy of the treatment approach, certain combinations proved very efficacious. This approach merits research replication with a more rigorous study design because of its potential application to patients with multifactorial etiologies of their nocturia.

Table 1: Reduction in nocturia and bother by treatment assignment (N=53)

MINIM treatment assignment	N	Mean Reduction in nocturia (SD)	% of group having 1-point or greater decline in bother
Terazosin only	20		
2 mg	2	1.00 (1.41)	50%
5 mg	2	2.00 (1.41)	100%
10 mg	16	1.25 (1.13)	95.8%
Tolterodine only	4	0.25 (.50)	75%
Zaleplon only	6	1.00 (.89)	83.3%
Behavioral therapy without drugs	12	1.00 (1.04)	83.3%
Tolterodine + Zaleplon	2	0.50 (2.12)	100%
Terazosin + Zaleplon	7	1.43 (.98)	100%
Terazosin + Tolterodine	2	3.00 (1.41)	100%
All three drugs	0		

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