NOCTURIA: DISTURBED SLEEP DUE TO FREQUENT VOIDING

CCSG

The Clinical Continence Supervision Group (CCSG) was founded in 2002 and the idea of the group is to look at continence issues in the form of a national clinical governance-style meeting. The aims of the CCSG's meetings are to:

- Provide a confidential forum for the clinical supervision of senior clinical continence nurse specialists and enable discussion and evaluation of patient-focused care
- Discuss clinical, managerial and ethical issues surrounding the care of patients with bladder and/or bowel dysfunction
- Review and discuss NHS directives and guidelines that potentially change nursing boundaries
- Share knowledge with other healthcare professionals
- Address unsafe professional practice.

In this article the CCSG presents an overview and case study, which outline the aetiology, assessment and treatment of nocturia.

Background

Nocturia is an often misunderstood condition, which can influence health status and quality of life, especially in the older person. It is defined as a patient experiencing one or more voids at night, which are preceded and followed by sleep (Abrams et al, 2002; van Kerrebroeck et al, 2002). Much has been written on the pathological, behavioural and environmental factors in order to attempt to classify nocturia, however, it continues to be poorly managed (Fonda, 1999).

Unfortunately nocturia is frequently considered a benign condition that is a natural part of aging, therefore, thorough assessment is often neglected. Nocturia is prevalent in the over 65s and can increase with age, although exact figures are not available. Lundgren (2004) postulates that over 50% of both men and women over 60 years of age are affected. It can result from urinary dysfunction, diabetes mellitus or insipidus, cardiovascular disease, peripheral oedema, obstruction of the lower urinary tract, anxiety, or sleep disorders (Weiss and Blaivas, 2003).

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Pathophysiology

Although there are multiple factors that can result in nocturia, there are three main categories. The first of these is low nocturnal bladder capacity, in which the capacity is lower than the maximum voided volume (the largest single voided volume in a 24-hour period) (Weiss and Blaivas, 2000).

The second category is nocturnal polyuria, which is defined in several ways. Weiss and Blaivas (2000) define it as 35% or more of the 24-hour urine output. However, the fundamental feature is that urine production during the period of sleep is greater than the bladder capacity, which creates the need to get up more than once to void.

The third category is a combination of both low nocturnal bladder capacity and nocturnal polyuria, which is referred to as mixed aetiology.

Assessment

As with any patient, a detailed history of the problem is required. It is essential to establish what is normal for the patient and whether there has been a deviation. If there has been a change, either sudden or gradual, then the patient's level of dissatisfaction with the symptoms should dictate whether further investigation is required.

The 24-hour bladder diary is crucial in obtaining a working diagnosis and should be completed as accurately as possible. When interpreting the diary and calculating volumes, the first morning void volume should be included as night-time urine production, but not added to the number of night-time voids as it is considered diurnal. This will enable the clinician to make the distinction between nocturnal frequency, nocturnal polyuria and fluid balance. Some cases will be complex and may require onward referral for medical assessment.

Treatment

Treatment will depend on which category of nocturia is identified. Recent literature has described treatment algorithms that can guide clinical decision-making (Weiss and Blavias, 2000; Marinkovic et al, 2004). Treatment of nocturnal polyuria should centre on the underlying cause. The use of diuretics at teatime has been shown to be effective in a randomised controlled clinical trial (Reynard et al, 1998). Desmopressin acetate, which is a vasopressin analogue, is also cited as an effective treatment option as it decreases night-time urine production (Matthiason et al, 2002). Although it is not licensed

for the over 65s, many studies consider desmopressin acetate to be safe in this age group (Asplund et al, 1998; Kuo, 2002; Lose et al, 2003; Lose et al, 2004; Weatherall, 2004).

However, there will be occasions where nocturnal polyuria does not respond to remedial treatment of the underlying cause. In this case, simple conservative measures maybe useful, such as elevation of the legs (possibly with graduated compression stockings) in the afternoon to redistribute any interstitial space fluid that may be creating diuresis before bedtime, although the evidence base is scanty in terms of efficacy. Other measures include fluid restriction or compression hosiery to reduce lower limb fluid build up. Alteration of fluid intake and patterns of drinking should also be considered, as well as advice regarding a calming bedtime environment and good pre-sleep habits, such as avoiding daytime napping, and avoiding alcohol and spicy foods.

Case study

Ms A, a 67-year-old female patient, referred herself to the nurse-led continence clinic after finding that she was having to empty her bladder frequently at night. Her bladder diary showed a fluid intake of 1400mls, none of which contained any caffeine. Her total daytime output was 505mls in five voids, but at night this increased to a total of 1,645mls in six voids, the range of which varied between 220–300mls. Ms A's disturbed sleep pattern was causing her concern and resulting in fatigue.

Ms A had a history of coeliac disease, rheumatoid arthritis, bronchiectasis and depression. Urinalysis was normal and a bladder scan showed a minimal post micturition residual. She requested to be catheterised in order to get a good night's sleep. Ms A had considered using an incontinence pad, but as she was not incontinent and was woken by her bladder sensation, this was not appropriate. The request for catheterisation appeared logical to the patient, but catheterisation is not without its dangers and does not necessarily address the underlying causes of the problem.

Ms A was being seen by a urologist at the time of her self-referral and was subsequently referred to an endocrinologist. Investigations undertaken included an ultrasound scan, X-rays, and mid-stream urine and blood tests, but all the results were normal. Various treatment options were tried, including the prescription of a diuretic in the morning and restricting her fluid intake during the evening. Desmopressin was also prescribed, which reduced the volume of urine produced, but the reduction in number of voids was not consistent. Following a discussion with the continence advisor about the risks and benefits of catheterisation, Ms A decided on the option of using a catheter with a valve during the day and continuous drainage at night. It was found that this did provide her with some respite.

Summary

In this case study, the patient presented with symptoms of nocturnal polyuria and requested an indwelling urethral catheter as a management option. The impact of nocturia on the health and social aspects of a person's life should not be underestimated. Patients must be assessed with respect to nocturia/excessive nocturnal urinary frequency and may require onward referral. Comprehensive assessment will determine whether the condition should be categorised as either nocturnal polyuria, low nocturnal bladder capacity or a combination of both.

Treatment needs to be aimed at reducing nocturnal voids and/or nocturnal volume, depending on the initial findings. The 24-hour bladder diary is a fundamental part of the assessment, which will guide the healthcare professional in reaching a working diagnosis. Treatment monitoring needs to take place regularly and vigilance is necessary in order to reduce the risk of adverse events. Better understanding of this common and misunderstood condition will maximise health gain for patients, such as improving sleep quality and daytime activity. CUK

References

Abrams P, Cardozo L, Fall M et al (2002) The standardisation of terminology of lower urinary tract function: report from the standardisation sub-committee of the International Continence Society. *Neuro Urodyn* **21**: 167–78

Asplund R, Sundberg B, Bengtsson P (1998) Desmopressin for the treatment of nocturnal polyuria in the elderly: a dose titration study. *Br J Urol* **82**: 642–46

Fonda D (1999) Nocturia: a disease or normal aging? *Br J Urol Int* **84(Suppl 1)**: 13–15

Kuo HC (2002) Efficacy of desmopressin in treatment of refractory nocturia in patients older than 65 years. *Urol* **59(4)**: 485–89

Lose G, Lalos O, Freeman RM, van-Kerrebroeck P (2003) Efficacy of desmopressin (Minirin) in the treatment of nocturia: a double-blind placebo-controlled study in women. *Am J Obstet Gynecol* **189**: 1106–13

Lose G, Mattiasson A, Walter S et al (2004) Clinical experiences with desmopressin for long-term treatment of nocturia. *J Urol* **172**: 1021–25

Lundgren R (2004) Nocturia: a new perspective on an old symptom. *Scand J Urol Nephrol* **38(2)**: 112-116

Marinkovic S P, Gillen LM, Stanton SL (2004) Managing nocturia. *Br Med J* **328**:1063–66

Matthiasson A, Abrams P, van Kerrebroeck P, Walter S, Weiss J (2002) Efficacy of desmopressin in the treatment of nocturia: a double blind placebo-controlled study in men. *Br J Urol Int* **89**: 855–62

Reynard J, Cannon A, Yang Q, Abrams P (1998) A novel therapy for nocturnal polyuria: a double-blind randomized trial of furosemide against placebo. *Br J Urol* **82**: 215–18

van Kerrebroeck P, Abrams P, Chaikin D et al (2002) The Standardisation of Terminology in Nocturia: Report from the Standardisation Sub-committee of the International Continence Society. *Neuro Urodyn* **21**: 179–83

Weatherall M (2004) The risk of hyponatraemia in older adults using desmopressin for nocturia: a systematic review and meta-analysis. *Neuro Urodyn* **23**: 302–25

Weiss JP, Blaivas JG (2000) Nocturia. *J Urol* **163**: 5–12

Weiss JP, Blaivas JG (2003) Nocturia. *Curr Urol Rep* **4(5)**: 362–66