Management of Nocturia

Definition- Nocturia is defined by the International Continence Society (ICS) as "the complaint that the individual has to wake at night one or more times to void …each void is preceded and followed by sleep." (1,2). Nocturnal polyuria is defined as a nocturnal urine output of > 20% of a 24 hr urine volume in younger adults and 33% in older adults

Clinically relevant Nocturia (> 2 voids per night) affects 2-18% of those aged 20-40 years rising to 28-62% for those aged 70-80 years. (3, 4) It affects men and women equally. It impairs quality of life due to fragmented sleep and increased depressive symptoms esp. seen in women.

The incidence of Nocturia is reported as a rate of 0.4% per year among adults (men and women) aged <40 years, 2.8% per year among those aged 40-59 years and 11.5% per year among those aged ≥60 years (≥1 void per night).(5)

Causes of Nocturia – (6)

Reduced anatomical bladder capacity	**Reduced functional bladder capacity**	**Increased fluid intake (24 hr.)**	**Increased fluid intake (evening/night)**	**Increased Diuresis (24 h)**	**Increased Diuresis (night)**
Bladder fibrosis	Detrusor overactivity	Too much of fluid	Wrong time of fluid	Global polyuria	Nocturnal polyuria
Post radiation fibrosis	Interstitial cystitis	Iatrogenic polydypsia	Excessive drinking in the evening	Diabetes Mellitus	Reduced Nocturnal Arginine Vasopressin
Augmentation bladder surgery	Urinary retention	Psychogenic polydypsia	Alcoholism	Diabetes Inspidus	Increased atrial natriuretic peptide- such as in heart failure, obstructive sleep apnoea
	UTI			Renal insufficiencey	Evening use of diuretics
	Bladder cancer/ Bladder stone			Oestrogen defeciency	Chronic venous insufficiency of the lower extremeties
	Foreign body			hypercalcemia	

				polydipsia	

Assessment of patients with Nocturia

• **Patient history -**

1. Fluid consumption, alcohol and caffeine intake, urinary symptoms (including voiding, urgency and frequency), sleeping habits, medical history, symptoms of obstructive sleep apnoea
2. Review current medication to identify drugs that may contribute to Nocturia-for example, calcium channel blockers such as amlodipine or nifedipine, diuretics such as furosemide or torasemide

• **Physical examination -**

Blood pressure, BMI, Abdominal examination (r/o palpation of bladder, pelvic masses), pelvic examination in women, checking for oedema of the lower extremities, checking genitalia for any abnormalities.

•**Frequency-volume chart (in all cases) 2days and nights-accurate (in mls) and honest!**

• **Investigations-** Urinalysis (in all cases) with urine culture if suspected urinary tract infection, serum electrolytes and creatinine, serum glucose/HbA1c, serum lipid profile, Check PVR with bladder scan , UDS (to r/o DO) and Cystoscopy (only if required clinically)

Management-

1. **Life style modifications-**
    a. Minimize fluid intake at least 2 h before going to bed caffeine and/or alcohol,
    b. Restricting total fluid consumption to <2 L/day, if comorbidities allow.

c. Emptying bladder before going to bed

d. Barrier-free access to a toilet or a toilet chair

e. Increasing exercise and fitness levels (including pelvic floor exercises).

f. Reducing dietary salt intake

g. Weight loss if overweight/obese

h. For patients with peripheral edema (lower extremities) due to congestive heart failure or chronic venous insufficiency- Elevating the legs above the heart level a few hours before going to bed for sleeping. Consider support stockings during daytime-put on before rising in the morning.

i. For patients on diuretics- Taking diuretics mid-afternoon, rather than just prior to retiring. This should take into consideration the half-life of the specific diuretic (e.g. furosemide has a serum half-life of ~1.5 hours and torasemide 3.5 hrs)

j. Sleep hygiene

k. Depression

2. **Medical management-**

a. Anti muscarinics or beta 3 agonist (Mirabegron) for OAB management

b. Desmopressin- useful only in patients with idiopathic nocturnal polyuria with excessive water diuresis, or in patients with central diabetes insipidus, as this is indicative of suppressed vasopressin levels.

Nocdurna- dose is 25 mcg once daily, 1 hr before bedtime, sublingually without water. Limit fluid intake to a minimum 1 hr before until 8 hrs after administration Check serum Na+ (beware of hyponatremia) within first week and then again at one month after initiating. More frequent monitoring is required for patients above the age of 65 yrs

S/E- hyponatremia- nausea, vomiting headache lethargy, dizziness. Patients to be warned for sign and symptoms suggestive of hyponatremia.

3. **Other interventions**- Relieve obstruction i.e. treatment of prolapse

Botox in patients with DO

In patients with OSA using continuous positive airway pressure or uvulo-palatopharyngoplasty. (Refer to ENT).

References-

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