

The association between nocturia, hormonal symptoms and bladder parameters in women: an observational study.

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Abstract

Objective Post-menopausal nocturia is poorly understood. This study aimed to identify hormonal and lifestyle factors associated with nocturia and to understand the relative contribution of altered urine production and bladder storage dysfunction in women. **Design, setting, population and methods** Women ≥ 40 years presenting to public continence services were enrolled in a cross-sectional study. 153 participants completed a hormone status questionnaire, a validated nocturia causality screening tool and a 3-day bladder diary. Descriptive statistics and logistic regression models for nocturia severity and bladder diary parameters were computed. **Results** Overall, 91.5 % reported nocturia, 55% ≥ 2 /night. There was a difference of 167.5 mL ($p < 0.001$) in nocturnal urine volume between women with nocturia ≥ 2 (median 736mL) vs less often (517mL). Significant predictors of self-reported disruptive nocturia were age (OR 1.04, 95%CI 1.002-1.073) and vitamin D supplementation (OR 2.33, 95%CI 1.11-4.91). Nocturnal polyuria was significantly more common with nocturia ≥ 2 compared to less often ($p < 0.002$). 150 minutes of exercise per week was protective for nocturnal polyuria (OR 0.22, $p = 0.001$). Nocturia index > 1.3 was significantly predicted by age (OR 1.07, $p < 0.001$), regular exercise (OR 0.41, $p = 0.036$), day flushes (OR 4.00, $p = 0.013$) and use of Vitamin D (OR 2.34, $p = 0.043$). Maximum voided volumes were significantly lower with nocturia ≥ 2 vs less often (night: 268ml vs 350mL; day: 200mL vs 290mL). **Conclusions** Bothersome nocturia in post-menopausal women is associated with changes to both nocturnal diuresis and bladder storage. Regular physical activity, prolapse reduction and oestrogen replacement may be adjunctive in managing bothersome nocturia in women.

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