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GENDER DIFFERENCE IN NOCTURIA: A COMPARISON OF FUNCTIONAL AND CYSTOMETRIC BLADDER CAPACITIES

AIMS OF STUDY: Nocturia is a significant but poorly researched problem. Both men and women suffer from this entity, however gender differences in the pathophysiology of nocturia have not been elucidated. The aims of our study are to determine if there are gender differences in 1) night time and day time bladder capacities and 2) voiding diary-derived and cystometry-derived bladder capacities in patients with nocturia.

METHODS: One hundred fifty-two consecutive men (n=50) and women (n=102) with nocturia were evaluated from our data base. Nocturia was defined as waking up more than once at night to urinate. The functional bladder capacity (FBC), nocturnal bladder capacity (NBC), and daytime bladder capacity (DBC) were recorded based on their 24 hour voiding diaries. The patients underwent multi-channel video urodynamics according to the recommendations of the International Continence Society, except during the filling phase, patients were not instructed to inhibit voiding. The cystometric bladder capacity (CBC) was defined as the volume at which the patient reported urgency to void. The DBC, NBC, FBC and CBC were compared between men and women. In men and women, DBC and NBC were compared. The DBC, NBC, and FBC were compared to CBC in men and women. All comparisons were done using Student's t-test, and was determined to be statistically significant when the p value was less than 0.05.

RESULTS: The average ages in men and women are 65.1 ± 11.5 and 61.1 ± 15.7 , respectively. The average volumes and standard deviation of DBC, NBC, FBC and CBC are shown in Table 1, and as seen in this table, there is no statistically significant difference between men and women. The DBC and NBC are not significantly different in both men ($p=0.49$) and women ($p=0.17$). The statistical differences of comparisons between the voiding diary-derived bladder capacities and CBC are seen in Table 2. The FBC in men is significantly less than the CBC as opposed to women in which FBC is not significantly different from the CBC.

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Table 1: COMPARISON BETWEEN AVERAGE MALE AND FEMALE BLADDER CAPACITIES IN PATIENTS WITH NOCTURIA

	Male	Female	p value
DBC (ml)	239.7(±118.2)	268.6(±156.5)	0.21
NBC (ml)	258.5(±149.9)	299.8(±169.1)	0.13
FBC (ml)	294.0(±146.8)	335.4(±170.4)	0.13
CBC (ml)	415.1(±253.7)	355.6(±180.6)	0.14

Table 2: P VALUES FOR T-TEST COMPARISON AGAINST CBC IN MEN AND WOMEN WITH NOCTURIA

	Male	Female
DBC (ml)	0.00003	0.0008
NBC (ml)	0.0003	0.04
FBC (ml)	0.005	0.41

CONCLUSIONS: In patient with nocturia, the bladder capacities based on voiding diaries and cystometry are the same in both sexes. Of interest is the gender difference in the relationship between diary-derived and cystometry-derived variables: unlike women, in men, the functional bladder capacity is significantly less than the cystometric bladder capacity. The data suggest that there is a gender difference in nocturia and the reason for this disparity needs to be further investigated.

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