

THE PREVALENCE OF NOCTURIA AND NOCTURNAL POLYURIA: CAN NEW CUTOFF VALUES BE SUGGESTED FOR DIFFERENT AGE GROUPS?

Hypothesis / aims of study

According to 2002 International Continence Society (ICS) definitions; nocturia is defined as waking at night to void which applies to any numbers of voids at any time during the night (1). Nocturnal polyuria (NP) is defined as the production of an abnormally large volume of urine during sleep. Both definitions however are controversial according to some authors. Some suggest that getting up to void for once in a night may be normal. There are also controversies about the cut-off point for nocturnal polyuria. The aim of this study was to assess the prevalence of both conditions and define the mean values of NP in the population.

Study design, materials and methods

The data of a population-based prevalence survey which was conducted in a random sample of 2128 women and men aged ≥ 18 years was used for the analysis in this study. Participants were requested to fill in a questionnaire including validated ICS definitions and ICIQ-SF. Additionally, a one-day bladder diary was given to each individual to fill in for a 24-hours period. The participants were divided into 5 age groups (18-29, 30-39, 40-49, 50-59 and ≥ 60). The prevalence of nocturia was calculated for ≥ 1 time, ≥ 2 times and ≥ 3 times. NP was determined according to ICS definitions. The mean \pm SE and 95% CI were calculated in each group for nocturnal polyuria.

Results

The prevalence of nocturia in each group and the cut-off values for NP were given in tables. The prevalence of nocturia significantly increased with aging. When nocturia was defined as 2 or 3 times or more voiding at night, the prevalence decreased significantly. NP increased with age in men however no linear correlation with age was observed in women. When $>95\%$ CI was considered as abnormal, cut-off values for the diagnosis of NP for the age groups; <50 years, 50-59 years and ≥ 60 years were 30.5%, 37.1% and 38.6 for men and 24.7%, 30.1 and 27.1 for women, respectively.

Interpretation of results

Although the consensual ICS definition sticks to the nocturia cut-off of one void per night, some authors suggest that choosing two voids per night might be more clinically relevant and better correlated to quality of life (QoL) impairment (2). Our results showing the significant decrease in the prevalence of nocturia according to the latter definition support this suggestion. According to the most recent ICS definition, nocturnal polyuria is present when an increased proportion of the 24-hr output occurs at night (1). The ICS standardization report on terminology states that the normal range of nocturnal urine production differs with age and normal ranges remain to be defined (3). There is gap between the defined age groups (young adults and over 65 years) because there is a high range between the defined cutoff values. For example; what should be the NP cutoff for a man aged 63 years? Should the answer be 20%, 33% or somewhere between these two cutoff values? It is stated that these suggested definitions of NP, which refer to a day/night ratio in urine production were not based on normal distributions and were not properly validated (3).

Concluding message

The results of our study showed that the definition of nocturia was still controversial and waking up once for voiding might be within normal spectrum. The definition of nocturnal polyuria can be modified and new cut-off values can be defined by the data of ours and forthcoming studies.

AGE	18-29	30-39	40-49	50-59	≥ 60	TOTAL
MEN						
Nocturia $\geq 1^*$	5.2%	10.6%	23.4%	34.7%	57.7%	24.8%
Nocturia ≥ 2	0%	3.3%	13.8%	22.9%	48.1%	16.1%
Nocturia ≥ 3	0%	1.3%	6.9%	9.3%	27.9%	8.2%
WOMEN						
Nocturia $\geq 1^*$	19.1%	21.5%	35.3%	43.9%	50.0%	31.0%
Nocturia ≥ 2	11.8%	11.1%	22.1%	28.1%	30.0%	18.6%
Nocturia ≥ 3	5.4%	5.4%	11.6%	15.8%	14.2%	9.4%
ALL						
Nocturia $\geq 1^*$	14.1%	17.5%	30.1%	39.7%	53.6%	28.4%
Nocturia ≥ 2	7.5%	8.3%	18.5%	25.7%	38.4%	17.6%
Nocturia ≥ 3	3.4%	3.9%	9.6%	12.8%	20.5%	8.9%

	Nocturnal Polyuria Index*	Confidence Interval (95%)

MEN	MEAN (%)	S.D. (%)	Lower Bound	Upper Bound
<50 years	23.3	13.4	16.1	30.5
50-59 years	29.3	17.1	21.6	37.1
≥60 years	33.2	13.3	27.9	38.6
WOMEN				
<50 years	22.2	11.5	19.7	24.7
50-59 years	25.5	13.0	21.0	30.1
≥60 years	22.7	10.9	18.3	27.1
<i>S.D.= Standard Deviation</i>				
<i>* "nocturnal urine production" divided by "24-h urine production"</i>				

References

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Disclosures

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