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Aoki Y[1], Matsuta Y[1], Oyama N[1], Miwa Y[1], Akino H[1], Yokoyama O[1]
1. *The University of Fukui Faculty of Medical Sciences*

DIASTOLIC HYPERTENSION IS AN INDEPENDENT RISK FACTOR FOR NOCTURIA.

Hypothesis / aims of study

Previous some epidemiological studies have suggested a relationship between nocturia and hypertension, but other studies found no significant correlation. The relation between nocturia and hypertension remains unclear. Moreover, there have been no reports on the relationship between diastolic blood pressure and nocturia. We thus aimed to evaluate the relationship between diastolic hypertension and nocturia.

Study design, materials and methods

We collected data on 22,666 individuals (7,227 males and 15,439 females) who participated in a multiphasic health screening in Fukui, Japan, and who had not taken any anti-hypertensive agents within the previous 1 month. Self-reported current body weight and height were used to calculate body mass index [BMI] (body weight in kilograms divided by the square of height in meters). As part of a multiphasic health screening, blood pressure, fasting blood sugar were measured.

According to guidelines, the optimal target blood pressure level for uncomplicated hypertension is defined as lower than 140 / 90 mmHg regardless of age [1]. Blood pressure categories were defined as the following: 1) Normotension (NT), as systolic blood pressure (SBP) < 140 mmHg and diastolic blood pressure (DBP) < 90 mmHg; 2) Isolated diastolic hypertension (IDH) was defined as DBP ≥ 90 mmHg and SBP < 140 mmHg; 3) isolated systolic hypertension (ISH) was defined as SBP ≥ 140 mmHg and DBP < 90 mmHg; 4) Combined systodiastolic hypertension (SDH), as DBP ≥ 90 mmHg and SBP ≥ 140 mmHg (figure).

We analyzed the relationships between nocturia (defined as two or more voids/night) and other variables including SBP, DBP, age, gender, BMI, impaired glucose tolerance. A logistic regression model was used for statistical analysis. P-values <0.05 were considered statistically significant.

Results

The mean age was 59.5 ± 13.7 y and the mean blood pressure was 124.0 ± 17.0 / 75.2 ± 10.6 mmHg. The overall prevalence of nocturia was 5.4%, and prevalence was higher in older age groups. The percent distribution of blood pressure categories were 80.2% for NT, 2.3% for IDH, 9.9% for ISH, 7.6% for SDH, respectively.

In the multivariate analysis, a significant association was found between nocturia and the following: age, gender, IDH, SDH, impaired glucose tolerance (Table). There was not a significant correlation between nocturia and ISH.

Interpretation of results

In this study, we found a novel association between the prevalence of nocturia and diastolic blood pressure. Clinician may need to consider diastolic hypertension in the differential diagnosis of nocturia.

Concluding message

To best of our knowledge, this is the first study to show that diastolic hypertension is an independent risk factor for nocturia.

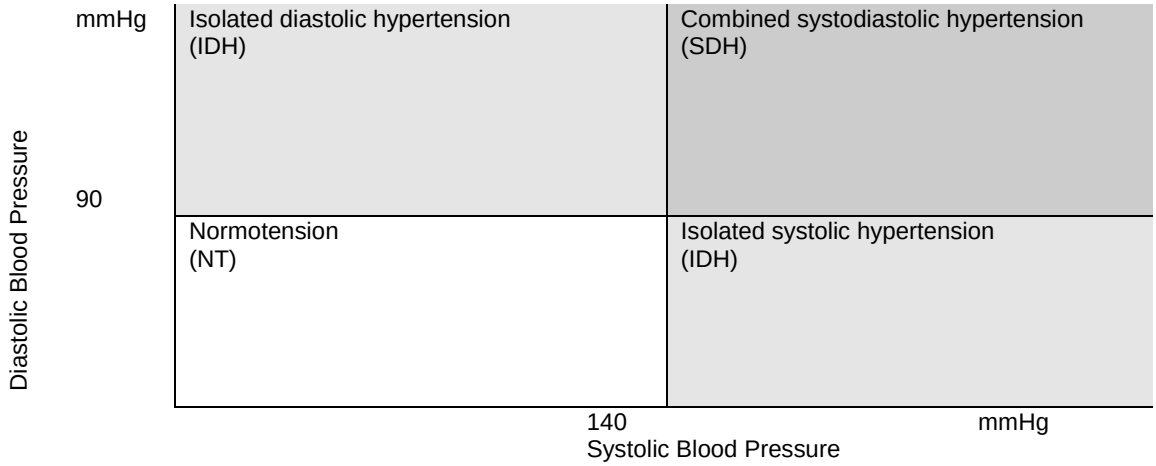

Figure. Blood pressure categories in this study.

Table. Multivariate analysis of risk factors for noctuira (two or more voids/night).

Variables		*Odds ratio*	*95% CI*			*P-value*
Age		1.020	1.015	-	1.025	<0.0001
Gender	Male	1 (ref.)				-
	Female	0.571	0.507	-	0.643	<0.0001
BMI (kg/m^2)	<18.5	1.257	1.019	-	1.551	0.0330
	18.5-24.9	1 (ref.)				-
	25.0-26.9	1.067	0.895	-	1.273	0.4650
	≥ 27.0	1.118	0.898	-	1.393	0.3168
Impaired glucose tolerance		1.519	1.342	-	1.719	<0.0001
Blood pressure	NT	1 (ref.)				-
	IDH	1.571	1.117	-	2.210	0.0094
	ISH	1.144	0.936	-	1.397	0.1894
	SDH	1.376	1.121		1.690	0.0230

References
1. JAMA 2003; 289:2560-2572

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Was this study approved by an ethics committee?	**Yes**
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Was the Declaration of Helsinki followed?	**Yes**
Was informed consent obtained from the patients?	**Yes**