

BODY MASS INDEX AND THE PREVALENCE OF NOCTURIA IN JAPANESE MEN.

Hypothesis / aims of study

Although overweight is an important risk factor for nocturia in Western countries, less is known about relationship with nocturia to obese in Japanese men. We assessed the association of nocturia with overweight among Japanese men.

Study design, materials and methods

We collected data on 3392 men who participated in a prostate cancer screening program in Fukui, Japan. Nocturia was evaluated using the nocturia score of International prostate symptom score (IPSS). 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). The men with prostate cancer were excluded from this study.

Results

The percent distributions of age were 21% for <60 years, 42% for 60-69 years, and 37% for ≥ 70 years. The mean age was 66.4 years (41-92 years, SD 8.3). The percent distributions of BMI were 4.3% for < 18.5 kg/m², 70.1% for 18.5-24.9 kg/m², and 25.6% for ≥ 25 kg/m². The mean BMI was 23.2 kg/m² (SD 3.0).

Figure 1. Nocturia score of 3392 Japanese men.

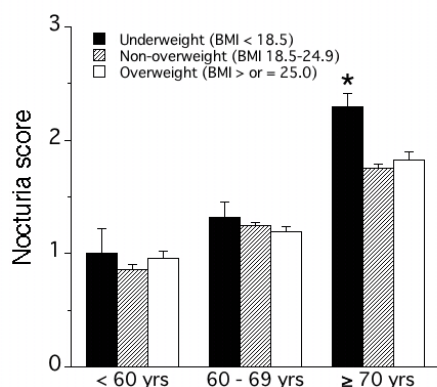
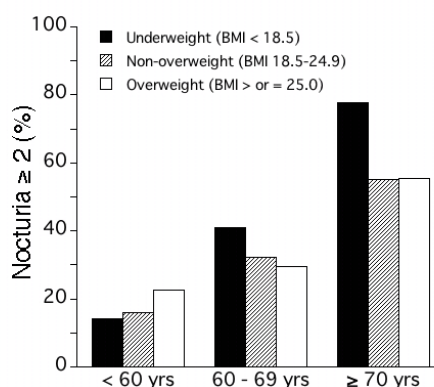


Figure 2. Prevalence of nocturia (at least two void per night) of 3392 Japanese men.



Nocturia score of IPSS were 0.9 for <60 years, 1.2 for 60-69 years, and 1.8 for ≥ 70 years. Figure 1 shows the underweight men had significantly a higher nocturia score compared with non-overweight and overweight men, with an increasing proportion in older groups ($P < 0.01$).

The age-specific overall prevalence of nocturia (two or more voids/night) were 18.2% for < 60 years, 31.7% for 60-69 years, and 56.9% for ≥ 70 years, with an increasing proportion in older groups ($P < 0.01$). Moreover, underweight men had more frequent nocturnal voids in 60-69 years and ≥ 70 years groups (figure 2).

Interpretation of results

We showed low BMI associated with the prevalence of nocturia in Japanese elderly men, which was not consistent with the findings from previous studies in Western country. According to the 1998 National Nutrition Survey of Japan, the prevalence of person with BMI ≥ 30 kg/m² had 2.5% for men ≥ 15 years[1]. This Prevalence was much lower than in the United States (17.7% for men in 1988)[2]. Because of the relatively low percentage of the categories of persons with BMI ≥ 30.0 kg/m² (0.5%), the categories of BMI 25.0 to 29.9 and ≥ 30 kg/m² were combined in this study. These differences of BMI distribution among countries may explain our findings.

It has been reported recently that high BMI was associated with increased risk of coronary heart disease, whereas low BMI was associated with intraparenchymal hemorrhage for Japanese, unlike many studies in the Western countries[3]. There might also be a racial difference for the risk factor of nocturia.

Concluding message

This study suggests that underweight increases nocturia among Japanese elderly men.

References

1. *Kokumin Eiyō Genjū Results of National Nutrition Survey, 1988*. Daiichi Shuppan: Tokyo; 2000 [in Japanese].
2. The spread of obesity epidemic in the United States, 1991-1998. *J Am Med Assoc.* **282**:1519, 1999.
3. Body mass index and mortality from cardiovascular disease among Japanese men and women: the JACC study. *Stroke.* **36**:1377, 2005.

HUMAN SUBJECTS: This study was approved by the the ethical committee of University of Fukui and followed the Declaration of Helsinki Informed consent was obtained from the patients.