Cold Hypersensitivity in the Hands and Feet is Associated with Lower Urinary Tract Symptoms in Young Taiwanese Men

Wei-Ming Cheng[1,3], Che-Jui Chang[1], Yu-Hua Fan[2,3], Chang-chi Chang[1,3], Yi-Chun Chiu[1,3]

[1]Division of Urology, Department of Surgery, Taipei City Hospital, Zhongxiao Branch, Taipei, Taiwan
[2]Department of Urology, Taipei Veterans General Hospital, Taipei, Taiwan
[3]Department of Urology, Faculty of Medicine, National Yang Ming Chiao Tung University, Taipei, Taiwan

Hypothesis / aims of study

Cold hypersensitivity in the hands and feet (CHHF) has been reported to be a protective or predisposing factors for many diseases; however, the relationship between CHHF and male lower urinary tract symptoms (LUTS) remains unclear. We aimed to investigate the association between CHHF and LUTS among young men of Southeast Asian origin.

Study design and methods

Taiwanese men aged 20–40 years were invited to participate in this cross-sectional study via an online questionnaire comprising general demographic information, comorbidities, subjective thermal sensations of their hands and feet in the past 6 months, and International Prostatic Symptoms Score (IPSS). Participants who reported cold sensation of both their hands and feet were classified to have CHHF, while those with IPSS score ≥ 8 were considered to have moderate to severe LUTS. Pearson's chi-square test or Student's t-test were used to compare differences between participants with and without CHHF. Univariate and multivariate logistic regression analyses were performed to investigate predictors of moderate to severe male LUTS in young Taiwanese men.

Results and interpretation

Among the 2,894 participants, 712 (24.6%) and 796 (27.5%) were classified as having moderate to severe male LUTS and CHHF, respectively. Men with CHHF were significantly younger, with lower body mass index (BMI) and higher total IPSS scores (all $p < 0.001$). Participants with CHHF had lower prevalence of diabetes mellitus (1.0% versus 2.5%, $p = 0.011$) but higher prevalence of psychiatric disorders (PD, 9.0% versus 5.4%, $p < 0.001$), insomnia (11.4% versus 5.4%, $p < 0.001$), and smoking (21.6% versus 17.2%, $p = 0.006$). Age ≥ 30 years (odds ratio [OR] 1.478, 95% confidence interval [CI] 1.227 - 1.780, $p < 0.001$), presence of PD (OR 1.502, 95% CI 1.091 - 2.067, $p = 0.013$), insomnia (OR 1.998, 95% CI 1.491 - 2.677, $p < 0.001$), smoking history (OR 1.272, 95% CI 1.030 - 1.571, $p = 0.025$), and CHHF (OR 2.023, 95% CI 1.690 - 2.422, $p < 0.001$) were significantly correlated with moderate to severe male LUTS in the univariate analysis. In the multivariate analysis including age ≥ 30 years, obesity, comorbidities, smoking history, and regular exercise habits, CHHF remained an independent predictor of moderate to severe male LUTS in young Taiwanese men (OR 2.042, 95% CI 1.696 – 2.458; $p < 0.001$), as well as age ≥ 30 years (OR 1.546, 95% CI 1.276 - 1.873, $p < 0.001$) and insomnia (OR 1.669, 95% CI 1.217 - 2.290, $p = 0.001$). In brief, the subjective feelings of cold sensation in hands and feet are associated with moderate to severe LUTS in Taiwanese young males after adjustment of age, obesity, comorbidities, smoking history and exercise habits.

Table 1. Demographic data: Non-CHHF group and CHHF group (20–40 years old)

Characteristic	total	Non-CHHF	CHHF	P value
Participants (n,%)	2894 (100%)	2098 (72.5%)	796 (27.5%)	-
Age (years, Mean ± SD)	31.7 ± 5.3	31.9 ± 5.3	31.0 ± 5.4	**< 0.001***
BMI (kg/m2, Mean ± SD)	24.9 ± 4.4	25.5 ± 4.5	23.1 ± 3.6	**< 0.001***
Comorbidities (n,%)	541 (18.7%)			
Hypertension	156 (5.4%)	115 (5.5%)	41 (5.2%)	0.725
Diabetes mellitus	61 (2.1%)	53 (2.5%)	8 (1.0%)	**0.011***
Hyperlipidemia	110 (3.8%)	87 (4.1%)	23 (2.9%)	0.114
Psychiatric disease	186 (6.4%)	114 (5.4%)	72 (9.0%)	**< 0.001***
Insomnia	210 (7.3%)	119 (5.7%)	91 (11.4%)	**< 0.001***
Smoking (n,%)	532 (18.4%)	360 (17.2%)	172 (21.6%)	**0.006***
Regular exercise (n,%)	1531(52.9%)	1130 (53.9%)	401 (50.4%)	0.094
Resistance exercise	885 (30.6%)	645 (30.7%)	240 (30.2%)	0.757
Aerobic exercise	1117 (38.6%)	831 (39.6%)	286 (35.9%)	0.069
IPSS	5.4 ± 5.3	4.9 ± 4.9	6.7 ± 6.1	**< 0.001***
LUTS				**< 0.001***
Mild (n,%)	2182 (75.4%)	1662 (79.2%)	520 (65.3%)	
Moderate (n,%)	633 (21.9%)	399 (19.0%)	234 (29.4%)	
Severe (n,%)	79 (2.7%)	37 (1.8%)	42 (5.3%)	
Moderate to severe (n,%)	712(24.6%)	436 (20.8%)	276 (34.7%)	**< 0.001***

Notes: Data are shown as mean ± SD or numbers (percentages). CHHF = cold hypersensitivity in the hands and feet; SD = Standard deviation; BMI = Body mass index; IPSS = International Prostatic Symptoms Score

Conclusions

CHHF affects more than one-fourth of the young Taiwanese men, and is an independent predictor of moderate to severe male LUTS. Whether the improvement of CHHF could improve LUTS in young males warrant further evaluation.

References

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