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Original Article

The definition and diagnosis of cold hypersensitivity in the hands and feet: Finding from the experts survey

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ABSTRACT

Background: Cold hypersensitivity in the hands and feet (CHHF) is a symptom patients usually feel cold in their hands and feet, but not dealt with a disease in western medicine. However, it is often appealed by patients at a clinic of Korean medicine (KM), considered to be a sort of key diagnostic indicator, and actively treated by physicians. Nevertheless, there is no standardized diagnostic definition for CHHF. Therefore, we surveyed KM experts' opinions to address the clinical definition, diagnostic criteria, and other relevant things on CHHF. Methods: We developed a survey to assess the definition, diagnosis, causes, and accompanying symptoms on CHHF. 31 experts who work at specialized university hospitals affiliated

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with KM hospitals consented to participation. Experts responded to survey questions by selecting multiple-choice answers or stating their opinions.

Results: Vast majority of experts (83.8%) agreed with our definition on CHHF ("a feeling of cold as a symptom; that one's hands or feet become colder than those of average people in temperatures that are not normally perceived as cold"). 77.4% of experts considered subjective symptoms on CHHF were more important than medical instrument results. Constitution or genetic factors (87.1%) and stress (64.5%) were the most common causes reported for CHHF. Conclusions: This study offers an expert consensus regarding the themes, opinions, and experiences of practitioners with CHHF. Our results underscore the need for standardized definitions and diagnostic criteria for CHHF.

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1. Introduction

Cold hypersensitivity in the hands and feet (CHHF) describes a sensation of noxious cold in a patient's extremities even at a room temperature. CHHF is most commonly found in women of Asian ethnicity.¹ The exact cause of CHHF is currently unknown, but it is generally supposed to be caused by the contraction of blood vessels in the extremities due to mental stress, neurovascular disease, or medical factors.^{1–3}

In cases where CHHF has an organic cause, appropriate treatment can be identified and administered. However, most patients present with CHHF symptoms in the absence of any apparent underlying organic cause. For this reason, Western medicine tends to focus on lifestyle management rather than the treatment of any disease. Korean medicine (KM), however, regards CHHF as a key indicator for cold pattern identification, and treats it with acupuncture, moxibustion, and various Korean herbal medicines.^{4–7}

Patients suffering from CHHF can present with diverse clinical manifestations including objective symptoms such as Raynaud's phenomenon accompanying changes in skin color or subjective symptoms feeling cold in hands and feet. Therefore, the diagnosis of CHHF can differ according to the diagnostic procedures performed and the perception of the attending physician. To this end, a plethora of studies have been performed to validate and standardize the description of CHHF. Existing studies characterizing CHHF have suggested the use of digital infrared thermography imaging (DITI),⁸ the cold stress test (CST),⁹ heart rate variability (HRV), red blood cell deformability tests, and peripheral nerve tests for diagnosis or evaluation. In spite of these efforts, there is still no consensus on the diagnostic guidelines for CHHF.^{10–12}

Therefore, the goal of the present study was to evaluate the CHHF symptoms and develop a clinical basic information for diagnosis and treatment. We surveyed CHHF experts in order to provide consensus data on the definition, diagnosis, causes, and associated symptoms and disease of CHHF.

2. Methods

2.1. Survey contents

To design an effective survey, five practitioners, who were specialized in one of the preventive medicines, two of the internal medicines, and two of the gynecological medicines, prepared questions based on existing CHHF research. The contents of the survey included five different types of associated themes on CHHF. There were five themes as follows: the definition, diagnosis (diagnostic medical instruments, giving weight between skin temperature or subjective symptoms, agreement regarding the diagnostic index of the difference between proximal and distal peripheral skin temperature⁸), causes, pattern identification, and accompanied symptoms and disease (Supplementary table 1).

The survey was formatted into multiple-choice questions or alternatively allowed respondents to select "Other" and provide comments. Respondents selected the top three causes of CHHF, the top two causes of pattern identification, and multiple answers for the accompanying symptoms and diseases.

2.2. Subjects

We contacted 55 CHHF experts from specialized university hospitals that were affiliated with KM hospitals between February and April of 2014. Among these individuals, 31 experts replied and agreed to participate in our survey. The number of respondents for each question was different in some cases. In this study, "expert" was defined as a physician in a department of KM with knowledge in the field of CHHF that was actively treating CHHF patients in a specialized hospital affiliated with KM hospitals, and had taught students in the departments of gynecology or internal medicine.

2.3. Research procedures

It was requested to a survey company at January 2014 in order to conduct this survey, where any of the media such as telephone, email, or message were used to each expert. The survey text was sent and took by an e-mail, and the survey was finished on April 30, 2014. Supplemental opinions asking if they felt that the survey topics needed further investigation, and a query was also requested asking whether any other suggestion is need or not. No additional opinions were provided,

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