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Original Article

Population-based comparison of traditional medicine use in adult patients with allergic rhinitis between South Korea and Taiwan

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Abstract

Background: As the number of people seeking to use traditional medicine to treat common diseases is increasing worldwide, the quantity of information that needs to be analyzed is also increasing. Traditional medicine is commonly used in South Korea and Taiwan for treating allergic rhinitis and is covered by the National Health Insurance in both countries. To date, there has been no nationwide comparison of traditional medicine used to treat patients with allergic rhinitis between these two countries.

Methods: This study analyzed the National Health Insurance cohort database in 2011 from South Korea and Taiwan to compare the utilization pattern of traditional medicine in adult patients with allergic rhinitis.

Results: During 2011, there were significantly more adult patients with allergic rhinitis using traditional medicine in Taiwan (9898/54,555, 18.1%) than in South Korea (533/11,761, 0.5%). Users of traditional medicine from both countries were more prevalent among women, the younger population aged 20−39 years, and among people who visited traditional medicine clinics more frequently than hospitals. The most common traditional medicine treatment modality for allergic rhinitis was acupuncture in South Korea, while powdered herbal preparations was most commonly used in Taiwan. *Xiaoqinglong-tang (Socheongryongtong-tang)* was the most commonly used herbal preparation in South Korea, while *Xinyi-san (Sinyi-san)* was the most commonly prescribed herbal preparation in Taiwan.

Conclusion: An analysis of the National Health Insurance database of South Korea and Taiwan revealed different utilization patterns of traditional medicine in adult patients with allergic rhinitis between the two countries. We believe these phenomena are due to the difference in the national healthcare systems in both countries.

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Keywords: Acupuncture; Allergic rhinitis; Herbal medicine; National health insurance database; Traditional medicine

Conflicts of interest: The authors declare that they have no conflicts of interest related to the subject matter or materials discussed in this article.

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1. Introduction

Allergic rhinitis (AR) is a common allergic disorder observed in clinical practice. More than 400 million people suffer from AR worldwide.[1,2] Although AR is not a serious disease, it can be profoundly detrimental to a patient's quality of life, affecting school learning and even work performance.[3] The increasing number of patients with AR combined with its close association with asthma has piqued the attention of people worldwide.[4] In Asia−Pacific countries, the reported prevalence of AR varies widely (from 5% to 45%) but has consistently been observed to be rising.[5]

In Western medicine (WM), the common treatment modalities for AR are anti-histamine and immuno-modulatory drugs, hypo-sensitization, and surgery.[6] However, a number of people have observed that such treatments, when used alone, do not control their symptoms well.[7,8] Furthermore, several researchers have claimed that integrating traditional medicine (TM) with WM leads to a better outcome than the use of WM alone.[9,10] Finally, the side effects associated with WM have urged more patients with AR to seek alternative treatments, such as TM.[11] TM represents a new trend in healthcare that has become increasingly popular globally.[12] Moreover, in Asian countries, such as South Korea, Taiwan, Japan, and China, TM is not simply seen as an alternative therapy but as the primary treatment for some diseases.[13] Prompted by this trend, investigators are using various research methods to confirm both the safety and efficacy of TM.[3] Many clinical studies evaluating TM to treat AR have been carried out.[14] According to a systematic review in 2012, there were 266 clinical trials using Chinese herbal medicine to treat AR from 1999 to 2011.[15]

In a recapitulation of this trend, more recent studies have addressed the importance of TM in treating AR. For instance, one investigation, first published in 2007, used the National Health Insurance (NHI) database of Taiwan to identify the pattern of TM use in patients with AR.[16]A more recent study used the Taiwanese NHI database to describe the pattern of TM use in children with AR.[17] In both South Korea and Taiwan, where TM use is common in clinical practice, TM treatments are listed in their NHI schemes. In both countries, TM plays an important role in the National Healthcare System.[13,18−20] Furthermore, South Korea and Taiwan are the only two countries that have released details of the nationwide TM use in their NHI database to researchers. Using such large nationwide databases, researchers can access data with less selection bias than might occur with other study designs.[21] Currently, there are no studies comparing the utilization pattern of TM in treating patients with AR between these two countries. Therefore, in this study, we used large, population-based NHI databases to describe and compare the pattern of TM use in the treatment of adult patients with AR between South Korea with Taiwan.

2. Methods

2.1. Data source

The Taiwan NHI program was started in 1995 and, by the end of 2011, covered nearly all inhabitants. The use of TM has been reimbursed by the NHI since 1996. People in Taiwan are free to choose WM or TM and are allowed to visit either public or private medical facilities. In 1999, the Bureau of NHI began to release all claims data in electronic form to the public under the National Health Insurance Research Database (NHIRD) project. The structure of the claim files is described in detail on the NHIRD website and in other publications.[16,22] In brief, the database ambulatory care expenditures by visits file 2011 (CD 2011) was a collection of all visit files claimed from all medical care institutions containing the date of the visit, the patients' gender, date of birth, specialties and three major diagnoses of the visit coded using the International Classification of Disease, 9th Revision, Clinical Modification (ICD-9-CM). The dataset details of ambulatory care orders file 2011 (OO 2011) included all corresponding order files in a visit containing medical procedures, the drug prescribed and laboratory tests. Another registry for contracted medical facilities file 2011 (HOSB 2011) included basic data regarding the status of accreditation of medical care institutions: medical center, regional hospital, local hospital, and primary care unit, and beneficiaries' registry ID file to identify the number of valid beneficiaries in the study period. These files were also obtained for data-linking during data analyses.

Taiwan NHI benefits are available for TM that includes Chinese herbal remedies, acupuncture and traumatology manipulative therapy, especially for joint dislocation. In Taiwan, TM is reimbursed by the NHI only for ambulatory visits. At the end of 2011, there were 16 TM hospitals and 3411 TM clinics providing TM ambulatory visits. In addition, only licensed TM physicians qualify for reimbursement from the NHI. Specifically, 337 types of Chinese herbal formulas and over 500 types of Chinese single herbal preparations are covered by the Taiwan NHI.

South Korea started a mandatory social insurance system in 1977 and extended the coverage to the entire nation in 1989. More than 97% of the population is covered by the South Korea NHI, which covers both WM and TM. TM in South Korea, also known as Korean Medicine, shares its origins with Chinese and Japanese medicine but has several unique characteristics and treatment modalities, such as Sasang constitutional medicine, Saam acupuncture and Chuna.[23] TM in Korea includes acupuncture, moxibusion, cupping, pharmacupuncture and herbal medicine. TM services, covered by the Korea NHI since 1987, are restricted to diagnosis, herbal preparation, acupuncture and cupping.[24] Specifically, 58 types of Korean herbal formulas and 68 types of Korean single herbal preparations are covered by the South Korea NHI. Since 2013, South Korea has released the National Sample Cohort data, which contain records of all of the NHI data from the South Korea NHI program. Since 2014, the NHI service has released sampling research databases, including eligibility databases, medical treatment databases, health examination databases and medical care institution databases. Types of medical institutes in South Korea are categorized according to size: a tertiary general hospital is responsible for teaching and training and for the treatment of severe cases; a general hospital is a large hospital over 100 beds. Hospitals such as dental

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