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Editorial

Thermal Therapy for Patients with Heart Disease from the Perspective of Integrative Healthcare

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Abstract

Integrative Medicine (IM) and/or Complementary and Alternative Medicine (CAM) have been developing around the world. Author and colleagues have continued the management of Shikoku division of Integrative Medicine Japan (IMG) for years. One of the treatments of IM and CAM would be thermal therapy, which has categorized into two groups with A Warm-Water Bath (WWB) and Sauna Bath (SB). SB includes dry sauna in Western countries and Waon therapy originated from Japan. SB shows the reduction in cardiac preload and afterload by thermal vasodilation for patients with Congestive Heart Failure (CHF). Thermal therapy would be useful for further development of sauna and IM from the perspective of integrative healthcare.

Keywords: Thermal therapy; Sauna bath; Waon therapy

Abbreviations: IM: Integrative Medicine; CAM: Complementary and Alternative Medicine; IMJ: Integrative Medicine Japan

Introduction

Integrative Medicine (IM) and/or Complementary and Alternative Medicine (CAM) have been developing around the world [1]. Their clinical therapy has been adequately changed according to the regional situation in the light of the actual medicine and medical practice. There are some common points among them, which are i) a variety of medical treatments, ii) various kinds of cure and care, iii) always based on patient-based medicine and iv) are aiming for the evidence-based medicine [1].

Author and colleagues have continued the management of Shikoku division of Integrative Medicine Japan (IMG) for years [2]. They include annual congress of Shikoku IMG, and annual book of Shikoku Bulletin, which has been up to No.12 of Shikoku IMG. Consequently, we have dealt with practice and research of several kinds of therapies in IM and CAM. They include IM, music therapy, psychotherapy, egogram, hot spring therapy, thermal therapy, cardiac rehabilitation and so on [2,3].

Thermal therapy can be divided into two categories [3,4]. One is a group that immerses the body in hot or cold water. There has been marine or spa therapy with a long history, which has some relationship with modern fitness clubs for healthy people, or medical welfare and nursing homes for elderly patients with diseases. In such case, there are various kinds of bathtubs with shallow or deep shape. Clinically important point would be the presence of water pressure that affects the human body depending on the depth of the water. In other words, water pressure can push abdomen to push up the diaphragm [4,5]. This may influence the respiratory and cardiac functions in patients with respiratory and heart diseases. Consequently, applying water for thermal therapy may become benefit or loading whether the subject has respiratory and cardiac impaired function or not.

The other is a group that does not immerse the body in the water. A representative type is a sauna facility [3-5]. It includes dry, steam, infrared or other type. In case of going to sauna bath, there were usually healthy subjects, sportsmen and other people who want to enjoy the recreational activity. In contrast, the sauna can involve one of the medical indications of treatment for

subjects with coronary heart disease and chronic heart failure at present. Furthermore, saunas have been reported to be effective for cardiac rehabilitation [6]. Thus, current topic would be described concerning thermal therapy for patients with heart disease and Congestive Heart Failure (CHF) in this article from the perspective of integrative healthcare.

There was a study about the both of the two groups [6]. It was formerly considered that A Warm-Water Bath (WWB) or Sauna Bath (SB) would not be beneficial for the patient with CHF. There was a study of the comparison of WWB and SB which were provided to patients with CHF [6]. The hemodynamic effects of thermal vasodilation were investigated. The mean pressures of right atrial, pulmonary artery and pulmonary capillary wedge were increased significantly during WWB, but decreased significantly during SB. Consequently, the results suggested the reduction in cardiac preload and afterload by physiological effects of thermal vasodilation [6].

Mild sauna treatments are called dry saunas in Europe and Northern Europe. It has recently attracted attention, which was one of the health treatments. On the other hand, in Japan, it has been also prevalent in the fitness and also integrative medicine, which has been called Waon Therapy [6,7]. Concerning this technical term, "Wa" means mild, Japan, relax, and "On" means temperature, sound. Then, it means mild thermal therapy [6-8].

Waon therapy has been reported to show several basic and clinical effects. They include mobilization of CD34+ cells for immunological study [9], improving peripheral arterial disease [9] and pulmonary hypertension [10], Chronic Fatigue Syndrome (CFS) [11].

Furthermore, there was a meta-analysis of CHF patients (n=491) in the clinical efficacy for infrared sauna bath [12]. As a result, continuing the sauna 5 times a week for 2-4 weeks has brought significant decrease in Cardiothoracic Ratio (CTR) and B-type Natriuretic Peptide (BNP) and improvement in left ventricular ejection fraction (EF). Consequently, infrared sauna bath was effective for short-term improvement in cardiac function [12].

From clinical point of view, infrared sauna has been shown to have the effects for CHF, depression, chronic pain and CFS [13]. As a thermal therapy providing moderate heat the entire body, Finnish sauna was said to reveal positive effects for patients with Rheumatoid Arthritis (RA) [14]. RA patients have shown clinical efficacy of alleviating joint pain and rigidity by regularly taking sauna [13]. Moreover, RA patients have a short-term therapy of arthritis and low back pain by the application of giving superficial heat [14].

From medically basic point of view, sauna treatment can activate human endocrine system. It will promote the secretion of ACTH, prolactin, cortisol and epinephrine in response to the high temperature in sauna room [15]. By the stimulus of high temperature by sauna, the whole endocrine system would be stimulated to maintain more water and thermal equilibrium in our body [16]. Furthermore, sauna bath can have effects of decreasing LDL-C and increasing HDL-C [17]. Consequently, these responses given by sauna seemed to be beneficial for patients with non-communicable diseases such as metabolic syndrome.

Physiologically, sauna bath has shown several beneficial effects [18]. It can lead to conducive function to the therapy of locomotive tissue for inflammatory changes, and non-specific impairment of upper respiratory system, and support-induced various injuries [19]. By continuous exercise in sport movement, Exercise-Induced Muscle Damage (EIMD) may be developed. EIMD causes muscle pain, strain, cramps, impaired muscle function and delayed development of muscle soreness. When a person tried sauna bath before EIMD development, there were less impaired sensory function and more improved muscle functions from the thermal therapy [20]. Cooling behavior after sauna bath can cause some positive and complex effects on cardiac and vascular functions [21]. They can show improved biomarkers such as blood pressure, arterial stiffness and so on [22].

As to historical and social aspects, sauna had become prevalent during Olympic games of 1936 by Finnish athletes. In Scandinavian countries, people take sauna about at least once a week for maintaining health situation [23]. Regular taking sauna bath can increase adaptability to various inner / outer stress, and can contribute physical and psychological wellbeing [24]. Furthermore, sauna can bring to accelerate recovery and relaxation, and to refresh the mind and heart [25]. Authors expect that this article would be some reference for further development of sauna and IM from the perspective of integrative healthcare.

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