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Case report

Effect of oriental medicine music therapy on idiopathic chronic fatigue: A case study

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Abstract

Introduction: Chronic fatigue is a "persistent and recurrent fatigue" that lowers an individual's quality of life. The cause and treatment of idiopathic chronic fatigue (ICF) have not been clearly established. Oriental medicine music therapy (OMMT), which is one of the alternative therapies applied to many chronic diseases, is distinct from conventional music therapies in terms of active participation and being originated from the theory of traditional oriental medicine. Many studies have shown that patients with chronic fatigue are related to hypocortisolism. Based on salivary cortisol concentration, a validated fatigue severity scale (FSS) and visual analog scale (VAS) of overall fatigue, we identified a patient who recovered from ICF with the aid of OMMT.

Materials and methods: An outpatient with ICF was treated with OMMT for 40 min (1 session) 3 times a week. The treatment included listening to selected music and playing a musical instrument under the direction of an oriental music therapist. Twelve sessions of treatment were conducted, with salivary cortisol concentration measured before each session. The FSS and VAS were checked each week.

Results: After treatment with OMMT, the values of the FSS and VAS were significantly decreased. In contrast, the salivary cortisol concentration increased, which generally could indicate a recovery from chronic fatigue.

Conclusions: This case suggests that OMMT may be an alternative treatment for ICF.

Keywords: Chronic fatigue; Oriental medicine; Music therapy; Cortisone

Introduction

Chronic fatigue (CF), which is mostly defined as "self-reported recurrent and persistent fatigue lasting 6 or more months" [1] is poorly recovered by rest and not associated with exertion as a subjective symptom [2]. The more severe forms of CF involve idiopathic chronic fatigue (ICF) and chronic fatigue syndrome (CFS). ICF/CFS are prevalent all over the world [3] and lead to considerable damage to society by downgrading a person's quality of life [4]. The aetiology of ICF/CFS is yet medically unexplained. Although various treatments, such as cognitive behavioral therapy [5] and antidepressants [1], have been used, the response to these treatments is unsatisfactory and definite cures for ICF/CFS have not yet been established.

ICF is CF with fewer than 4 of additional symptoms essential for a diagnosis of CFS, which is characterized as severe fatigue and combination of more than 4 accompanying conditions such as psychological and social factors [6]. Most published studies focus on defining, evaluating and treating patients with CFS rather than ICF [7]. However, two-thirds of patients expressing CF in primary care do not meet standard for CFS [8]. General practitioners have been skeptical to the usefulness of the classification of CFS [9] and shown concern about validity of CFS as a disease [10]. In clinical fields, it is regarded more important to find proper management for ICF than that of CFS.

Recently, many clinical studies in relation to the alternative treatments for CF have been conducted. Oriental medicine music therapy (OMMT) focuses on the equilibrium between the body

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and mind [11]. OMMT is distinct from other types of music therapy in that it uses an active patient participation method and is based on oriental traditional medicine theory. To date, there have been no studies related to the effect of OMMT on fatigue.

Diminished adrenal steroid production is linked with fatigue, which is a major feature of Addison's disease and primary adrenal failure [12]. A number of studies on fatigue-related syndromes, such as CFS, fibromyalgia and post-traumatic stress disorder suggest that these diseases have low level of cortisol concentration [13–15]. There are 2 methods evaluating cortisol concentration; serum and salivary cortisol. Salivary cortisol measurement, a non-stressful method of assessing biologically active hormones, is known to reflect fatigue level more accurately than serum cortisol [16].

This case demonstrates successful use of OMMT in the recovery from ICF by evaluating validated questionnaires and salivary cortisol.

Materials and methods

The patient, a 38-year-old, married male with persistent fatigue, muscle pain, and insomnia visited our outpatient clinic. To identify the cause of his fatigue, thyroid, liver, and renal functions were checked. However, nothing abnormal was detected. Additional laboratory evaluation was done to check for systemic infection, but the possibility of infection was assessed as none. The fatigue persisted for at least 6 months, could not be relieved by rest and was medically unexplained. Because he had only 2 accompanying symptoms (sleep dysfunction and musculoskeletal pain), he did not meet all of the criteria for CFS and his fatigue could be diagnosed as ICF.

To assess his fatigue, a visual analog scale (VAS) for overall fatigue and a fatigue severity scale (FSS) were used. To measure the VAS, a 100 mm measurement instrument was given to the patient and he was instructed to indicate his severity of fatigue in relation to the 2 extremes (0: no fatigue, 100: very severe fatigue). The FSS includes 9 items rated on a 7-point Likert scale and is sensitive to gradations of fatigue severity [17]. The initial VAS and FSS scores for this patient were 72 and 47, respectively. The 2 scales were filled out once a week for 4 weeks.

The collection of saliva was carried out between 8 and 9 AM (before the meal and OMMT session) when salivary cortisol is not affected by food and overall daily cortisol production is more accurately measured [18]. The patient was asked to refrain from eating or brushing his teeth in order to improve the quality of saliva samples.

The initial value of the salivary cortisol concentration (taken at the second session) was 0.11 μg/dL which is below the normal range of 31–50 aged adult male [19]. Saliva was tested using Salivettes® collection tubes, which consisted of cotton swabs inside small plastic tubes kept in the freezer, at −70 °C, until the time of analysis. The analysis of salivary cortisol was conducted at Green Cross Reference Laboratory (Youngin, Korea) using an enzyme immunoassay.

OMMT was implemented for 40 min, 3 times a week. The overall therapy consisted of 12 sessions, with each session divided into 5 steps. In the first step, the patient practiced controlling *qi* through respiration to music played by the *Daegeum*, a traditional Korean pipe, for 5 min. This step helped to calm and relax him, so that he could accept the OMMT more comfortably. In the second step, the patient shook maracas and tapped them on his acupoints to the rhythm of individually customized music for 5 min. The following acupoints were used: *Fengshi* (GB31), *Fenglong* (ST40), *Neiguan* (PC6), and *Jianjing* (GB21). The third step was the practice of an oral sound and vocal exercises to the rhythm of the oriental music for 20 min. The patient beat time with his hand while he made high, low, and flat vocal sounds, which helped to relieve his depression and stress. The fourth step consisted of constraint relieving music therapy using the *Sogo*, a traditional Korean snare drum, which the patient played as he tapped the acupoints *Laogong* (PC8) and *Baihui* (GV20) to the rhythm for 5 min. The goal of this step was to promote the circulation of the *qi* and blood. The last step, which lasted 5 min, was the appreciation of selected oriental music to promote a peaceful mind. All treatments were conducted at the Department of Oriental Medicine Music Therapy Center, Kyung Hee University Hospital at Gangdong, Seoul, Republic of Korea.

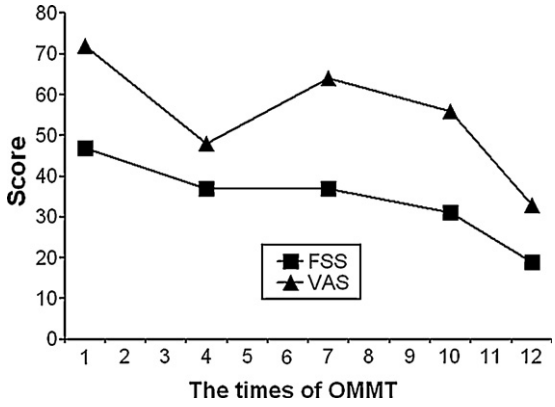

Fig. 1. Serial fatigue severity scale (FSS) and visual analog scale (VAS) of overall fatigue during oriental medicine music therapy (OMMT). The value of *Y* axis corresponds to the estimated score of VAS or the sum total of FSS.

Results

After the OMMT, the patient no longer complained of persistent fatigue. As shown in Figs. 1 and 2, the value of the FSS decreased from 47 to 19, while the value of the VAS decreased from 72 to 33. Salivary cortisol concentration increased from 0.11 μg/dL to 0.27 μg/dL which means salivary cortisol was recovered from below to within normal range [19]. Although insomnia persisted, muscle pain disappeared. No notable side effects emerged during or after the OMMT. The patient was free from other treatments known to affect fatigue, such as the intake of drugs or nutritional supplements, diet regulation, and exercise, during the OMMT period.

There were also considerable changes in his lifestyle. Before therapy, he stated, "I could barely lift my head every morning when I woke up . . . when I went to bed, it took a long time to fall asleep . . . in the daytime, I am constantly feeling the desire to sleep. It's just a vicious cycle." After 4 weeks of OMMT, he