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Editorial

Needs for remote cardiac rehabilitation and remote music therapy in recent circumstances

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Rehabilitation has become more important in the medical facilities and the residences of the patients [1]. Cardiac rehabilitation includes some situations. One is the case where the background is elderly people with a low general condition such as frail, sarcopenia and others. Among them, new technologies have been included such as transcatheter aortic valve implantation (TAVI) [2]. The other is remote cardiac rehabilitation [3]. In this article, two topics concerning remote cardiac rehabilitation and remote music therapy will be described.

Remote cardiac rehabilitation has been observed for a certain period. In Europe and the United States with moderately large land areas, management using telemedicine devices has been attempted for patients with heart failure (HF) even before the COVID-19 pandemic [4]. The HF incidence so far remains rather high, and HF patients have an elevated risk for frequent acute hospitalizations. Several technologies related to remote cardiac rehabilitation may give early indications of decompensation of HF and bring the optimization of adequate treatment for preventing HF hospitalizations [5]. Several large-scale trials have been reported [5]. There were three large randomized prospective trials: TEN-HMS in 2005, BEAT-HF in 2015, and Telemedical Interventional Management in Heart Failure II (TIM-HF2) in 2018 [6]. As a result, the effectiveness of vital data management by the monitor was not as high as expected. After all, 24-hour monitoring, doctor-led, and tele-nursing turned out to be effective.

As mentioned above, historical changes in cardiac rehabilitation have been important [7]. The main purpose of cardiac rehabilitation has been moved from the maintenance of a patient's health after an acute heart event to a more long-term target for secondary prevention. There are various patients with acute coronary event or revascularization, and with heart failure to moderate to a severe degree. For such patients, the recommended method would be exercise-based and multi-disciplinary cardiac rehabilitation. This judgment is from a Class 1A indication by European guidelines. Physical exercise is a crucial and evidence-based intervention in also secondary prevention programs. Preventive and rehabilitative care will be given by a hospital team of several professionals including a physician, exercise expert, physical therapist, and others. They include experts in telemedicine and eHealth to develop several internet programs [7].

What kind of factors may influence the continuation of cardiac rehabilitation in the hospital? It is the distance from the hospital to the patient's home. The farther a patient lives apart from the hospital, the lower one can continue participation in cardiac rehabilitation. Especially, in the case of heart failure, the distance factor becomes remarkable [8]. In order to respond to this situation, an educational video for cardiac rehabilitation was made that can be reviewed at home and performed remote cardiac rehabilitation. Two groups were compared with the remote cardiac rehabilitation and the non-rehabilitation groups [9].

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As a result, the frequency of emergency readmission could be significantly prevented. Furthermore, the QOL questionnaire by EQ5D was applied to both groups. Consequently, anxiety and depression factors were decreased more in the remote cardiac rehabilitation group compared to the outpatient cardiac rehabilitation group. These phenomena suggested useful and effective remote cardiac rehabilitation. For patients with heart failure with preserved ejection fraction (HFpEF), malnutrition has been one of the most crucial comorbidities [10]. From 274 HFpEF patients, Cholinesterase (ChE) becomes a useful prognostic marker for the prediction of adverse outcomes [10]. Successively, 842 HFpEF patients were investigated in the Prospective Multicenter Observational Study of Patients with HFpEF (PURSUIT-HFpEF) study [11]. As a result, the poor prognosis was associated with the frailty degree assessed by the Clinical Frailty Scale (CFS).

The author has been managing Shikoku Island Division, Integrative Medicine Japan (IMJ) for a long [12,13]. Among them, a recent trend can be introduced concerning remote music therapy sessions. It includes the music therapist and patient (client), who are located far away from each other. They can connect by a high-speed optical line to perform music therapy using a microphone, monitor, speaker. Currently, 5,300 certified music therapists exist in Japan, but half of them live in the suburbs of Tokyo. The Ministry of Health, Labor and Welfare, Japan announced that future medical care would be oriented to home medical care, a reliable long-term care system, promotion of computerization and telemedicine [14]. It would not be possible by SKYPE or zoom, because of slow speed and one-way voice transmission. On the other hand, recent technology with non-delay simultaneous two-way transmission enables the remote session to a satisfactory degree [15].

Some clinical ratings were presented for persons living with dementia (PLWDs) and caregivers [16]. The results were as follows: Exercise 1B, group cognitive stimulation 2B, psychosocial interventions for caregivers 2C, development of dementia-friendly communities 2C, and case management for PLWDs 2B. In order to promote healthy aging for older communities, adequate support for caregivers of dementia would be required [17]. Then, social networks to analyze community collaboration can be provided such as music therapy. The clinical efficacy of music therapy was observed on cognitive functions, behavioral disturbances and QOL for patients with dementia [18]. The main predictive factors include the Barthel index, Neuropsychiatric Inventory (NPI). NPI has been widely used clinically as a test to measure behavioral and psychological symptoms in dementia (BPSD). Its sub-items include mainly depression, irritability, agitation, hallucinations and aberrant motor activity.

Clinical evidence was found that the application of music therapy showed clinical efficacy of cognitive dysfunction [19,20]. Consequently, Music Therapy incorporated into Cognitive Remediation (MTCR) was conducted. As a result, the effect of cognitive dysfunction was observed [21]. The effect of music therapy on decreasing anxiety was investigated by randomized controlled trials (RCTs) [22]. Enclosed data were 32 studies with 1924 cases lasting 7.5 sessions on average and 7.75 weeks follow-up in duration. As a result, music therapy could improve anxiety significantly, in which the efficacy of standard mean difference (SMD) was -0.31 vs -0.49 for cases of < 60 vs ≥ 60 age-group, respectively. However, the factors of session and duration were not consistent, then further evaluation would be required [22]. In summary, topics on remote heart rehabilitation and remote music therapy were introduced. Across the world, the need for remote monitoring becomes greater because of the COVID-19 pandemic. This article will be hopefully useful for a new model of healthcare delivery, which is virtual visits.

Conflict of interest

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