



## Letter to Editors

**Spa therapy (balneotherapy) for rehabilitation of survivors of COVID-19 with persistent symptoms**

## ARTICLE INFO

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Dear Editor,

**Introduction for the hypothesis**

The knowledge on persistent symptoms and rehabilitation needs of COVID-19 survivors began to emerge [1–3]. The most common persisted symptom was fatigue (53%–64%), followed by dyspnea (42%–50%) [1–3]. The other symptoms were (but not limited to) psychological distress, joint pain, chest pain, cough, sleep disorders, and functional disability [1–3]. Also, patients reported a decreased quality of life [1–3].

Spa therapy may include balneotherapy (immersion in thermal-mineral water), peloid therapy, aquatic exercises, physical therapy modalities, and exercise according to spas' ability to deliver these treatments [4]. Recent reviews showed spa therapy/balneotherapy being beneficial in improving fatigue, joint pain, functional disability, psychological distress, sleep disorders, and quality of life in other diseases with these symptoms [5–7].

The recommendations of a recent article by Gasparyan et al. addressing the structuring and discussing the hypothesis [8] were followed in this hypothesis.

**Formulate hypothesis**

The proposed hypothesis is that spa therapy can be used in postacute rehabilitation for survivors of COVID-19 with persistent symptoms.

**How to test the hypothesis**

This hypothesis, which was based on an extrapolation of beneficial effects of spa/ sanatorium therapy seen in other diseases with similar symptoms [5–7], needs to be tested, because the pathophysiological mechanisms of these symptoms and experiences/perceptions of patients with different diseases may not be the same. The randomized controlled trials comparing spa therapy with usual care in survivors of COVID-19 with persistent symptoms are needed to test this hypothesis.

**Implications**

Spa therapy is in general deemed safe. In 2 studies with a large sample size, no serious adverse events associated with spa therapy were observed [9,10]. Regarding the mild to moderate severity of adverse events, an increase in pain, fatigue, hypertension, and upper respiratory tract infections were observed in some patients [9,10]. However, characteristics of spa therapy interventions (i.e. duration, temperature, etc.) should be individualized based on the clinical status of survivors of COVID-19, and the safety of spa therapy in these patients needs to be investigated.

There are some important clinical implications. First, survivors of COVID-19 may benefit from spa therapy. Furthermore, spas may increase the number of places delivering rehabilitation to survivors of COVID-19. Therefore, the workload on hospital rehabilitation units, which are currently overburdened by acute rehabilitation of COVID-19, would be lessened. Lastly, considering its inexpensive nature, integrating spa therapy into the rehabilitation programs may decrease the economic burden of COVID-19 on health systems, particularly for some European countries, Turkey, Israel and Japan where spa therapy/balneotherapy is widely available and preferred by patients.

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**Declaration of Competing Interest**

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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**Conflict of Interest**

The author has no conflict of interest in this hypothesis.

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