

Therapeutic and health promoting effects of rehabilitation with balneotherapy

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Balneotherapy for patients with disabilities is one of the oldest forms of rehabilitative therapy. Balneotherapy includes several modalities of treatments and wellness programs, such as physiological and pharmacological effects of warm water bathing and aqua-exercise, relaxing and biorhythm adjusting effects of staying in the urban climates and educational instruction for healthier life style. In order to examine the effects of balneotherapy for patients with disabilities, our rehabilitation methods in combination with balneotherapy were reviewed. 1) Effects of warm water bathing of hemiplegic lower limb on its isokinetic muscle strength were studied in twelve chronic stroke patients (53.3 +/- 14.2 y.o.). Peak torque of the knee flexions at any velocity increased after warm water bathing. Change in the maximum power and total work were similar to that of the peak torque. Warm water bathing might make it easy to exert their muscle strength at 120 degrees/sec in flexion corresponding to their severity of their hemiplegia. 2) Nine hemiplegic patients participated in the second study (56.9 +/- 16.6 y.o.). Participants sat in a relaxed position on a chair, and dipped the affected forearms into warm water at 40 degrees C for 15 minutes. After forearm bathing, the simple test for evaluating hand function score increased significantly, the resistance power of elbow extension at 90 degrees/min decreased significantly. Forearm bathing appeared to improve function and decrease spasticity in hemiplegic hands. This treatment might facilitate hand rehabilitation. 3) The aim of third study is to assess the efficacy of exercise baths on quality of life (QOL). 49 subjects (20 patients with brain disease, 21 patients with orthopedic disease, and 8 patients with other diseases) were first treated by conventional rehabilitation comprising physical therapy and occupational therapy for 4.2 +/- 1.4 weeks. Exercise baths were then added to the rehabilitation program for a further 4.4 +/- 1.2 weeks. QOL was evaluated by alterations in the MOS Short-Form 36-item Health Survey (SF-36). We defined the period from admission to exercise bath start as Treatment I, and the period from exercise bath start to discharge as Treatment II. On admission, before and after exercise bath, QOL was evaluated using the SF-36 scores. We found that the increase of all eight subscales of the SF-36 was smaller in Treatment I period than in Treatment II period. It was concluded that exercise baths are an effective non-pharmacological treatment that might facilitate rehabilitation programs.

We observed beneficial effects of balneotherapy on controlling the spasticity of hemiparetic limb, in accomplishing repetitive facilitation exercise that strengthen neural circuits, and on the quality of life in patients with stroke and orthopedic patients. Rehabilitative treatment in associated with both neuro-rehabilitation and traditional spa therapy will develop and contribute to welfares of the people.