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Whole-Body Cryotherapy in rehabilitation of patients with rheumatoid diseases--pilot study

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Abstract

Cryotherapy as a whole-body cold therapy (with cold air cooled by addition of nitrogen blown on the patients in an open cabin) for treatment of inflammatory rheumatic diseases already started in Bad Säckingen in 1986. In 1996, a new cold chamber (this time a closed chamber without any addition of nitrogen) based on compressor technology was introduced. The aim of our study was to test whether significant pain relief could be achieved by means of this cold therapy. Furthermore, we were interested in the practicability and acceptance of this new technique. Wellbeing during the treatment application and pain level were assessed using verbal and numerical rating scales. The sample consisted of 120 consecutive patients (75% women, age: 30-67 yrs, M = 52.6 yrs). These patients were suffering from primary fibromyalgia (40.7%), rheumatoid arthritis (17.3%), chronic low back pain (16.4%), ankylosing spondylitis (10.9%), osteoarthritis (9.1%), secondary fibromyalgia (3.6%) and other autoimmune diseases (1.8%) (mean duration of symptoms: 4 yrs). The patients were treated 2.5 minutes on average in the main chamber (mean temperature: -105 degrees C). The patients' statements concerning their pain level were analyzed by means of analyses of variance with repeated measures and paired-sample t-tests.

Results: The pain level after application of the cold therapy decreases significantly. The pain reduction lasts about 90 minutes. The initial pain level decreases during the whole time of treatment, no significant improvement, though, can be shown from the middle to the end of the four-weeks treatment. According to the results of our study, there is evidence that the whole-body cold therapy generates important short-term effects and somewhat weaker effects over the treatment period as a whole. Short-term pain reduction facilitates intensive application of physiotherapy and Occupational Therapy. The treatment procedure is practicable, and all in all well tolerated. From the patients' point of view, whole-body cold therapy is an essential part of the rehabilitation program.