

The role of thermal balneotherapy in the treatment of obese patient with knee osteoarthritis.

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Abstract

Osteoarthritis (OA) is the most common form of arthritis clinically characterized by joint pain, functional limitation, and reduced quality of life. Several studies have shown a clear link between obesity and higher risk of knee OA. According to the multifactorial OA pathogenesis, the management of this condition requires a multidisciplinary approach. The objective of this study is to evaluate hydrokinesitherapy effects in thermal setting in obese patients with knee OA. Fifty-three patients were assessed for eligibility, of which 33 refused the treatment, while 10 patients dropped out after the enrollment for personal reasons or inability to adhere to the program. Ten patients (8 females, 2 males, mean age of 59.4 years) with obesity (range BMI 30-45 kg/m²) and knee OA (II-III grade of Kellgren-Lawrence scale) treated with hydrokinetic therapy in thermal water (two sessions per week for 8 consecutive weeks) completed the study. Primary outcome measure was pain (VAS). Secondary outcomes were clinical knee evaluation (range of motion-ROM, lower-limb muscle strength), WOMAC, and Lequesne Algofunctional Index. Patellar tendon and peri-articular soft tissue ultrasound evaluation and gait analysis at baseline (T0), at the end of treatment (T1), and at 6 months of follow-up (T2) were performed. Significant decrease on VAS pain during walking on a flat surface and going up/down stairs was reached from baseline at T1 ($p = 0.0039$; $p = 0.0098$) and was maintained at T2 ($p = 0.00954$) exclusively for VAS pain during walking on a flat surface. WOMAC score showed a significant reduction between T0 and T1 ($p = 0.0137$) and between T0 and T2 ($p = 0.006438$), as ROM evaluations. Kinematic path assessment did not show significant results in individual gait steps, except for the space-time variables of the average speed and the values of ground reaction force (GRF) obtained with force platforms. Hydrokinesitherapy in thermal environment in obese patients with knee OA may determine pain relief, joint function improvement, and walking speed increase until 6 months of follow-up.

KEYWORDS:

Exercise therapy; Gait analysis; Hydrotherapy; Knee osteoarthritis; Mineral waters; Obesity