THE EFFECTS OF SHORT TERM THERMAL CURE THERAPY ON SCAR TISSUE AND GENERAL PHYSICAL PARAMETERS IN BURN PATIENTS

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Rationale

Thermal cure therapy, an aspect of balneotherapy, is widely known in rehabilitation programs for musculoskeletal and dermatological diseases, although far less after burn injuries. Our explorative study investigated the effects of thermal cure therapy on physical parameters and scars in burn patients.

Methods

Fourteen burn patients (10 men and 4 women) between 18 and 56 years of age (mean 36.2 ± 10.7 years) followed a thermal cure therapy during three weeks in a thermal cure station in Avène® (France).

The thermal cure therapy consisted of standard baths, air bubble baths, hydrojet-massaging baths, showers, sprays, filiform showers (fig. 1a), underwater massages (fig. 1b), localized pulverizations of face and hands, and thermal spring water compresses (fig. 1c).

Patients were recruited from different Belgian burn centers. Informed consent was obtained from all patients. General physical parameters like respiratory function, hand strength, physical fitness and joint motion were assessed. Scar related parameters were measured using objective instruments for sensory testing, color, transepidermal water loss, elasticity and using subjective questionnaires like POSAS (patient and observer scar assessment scale). All these parameters were obtained at baseline, during the intervention, and at follow-up two weeks and three months after the end of therapy. Friedman tests were used for detection of any significant change overall and paired Wilcoxon tests were used for the change observed three months after end of therapy compared to baseline.

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Results

No significant relevant effects on general physical parameters were found. Objective measurements on scars showed no significant results, except a positive trend for erythema after three months ($p=0.05$). All parameters of POSAS showed significant improvements after the three months evaluation period ($p \leq 0.002$).

Evolution of scar on ankle-anterior (fig. 3a-b) and hand-dorsum (fig. 4a-b) before (a) and after (b) thermal cure therapy.

Conclusion

Thermal cure therapy showed a positive influence on scar perception of both burn patient and observer. Further research needs to be done to compare these results to patients following aquatic exercise or no additional therapy (control group).

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