

Spa Therapy for Generalized Osteoarthritis: an Open, Observational, Preliminary Study

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Text received May 5th, 2014; accepted October 6th, 2014

Keywords:

spa therapy; generalized osteoarthritis; (creno)balneotherapy; peloidotherapy

Abstract – Objectives. Open, prospective study to evaluate the effect of spa therapy on generalized osteoarthritis (GOA).

Methods. Patients diagnosed as GOA were recruited from a private outpatient clinic. The treatment protocol was designed with 6 different spa modalities, 3 for each consecutive day, during 18 days. Interventions were Berthollet's technique (local mineral water cloud application), peloidotherapy, hydrotherapy, under water /standard (dry) massage, supervised water exercise, bath in hydro-massage pool, bath in tub with hydro-jets, free immersion in mineral water pool. The primary outcome was a clinically relevant improvement in 50% of patients at the end of the treatment. Statistical analyses were based on intention-to-treat method. Health care providers were blinded to the study. **Results.** Ninety nine patients were included between March 7th-April 29th 2011 and all were analyzed for the primary outcome. Clinically relevant improvement was observed in 61% of the patients at the end of the treatment, and 68% at the 8th month. Patient acceptable symptom state was achieved in 33% of the patients at the 3rd week and 75% at the 8th month and Outcome Measures in Rheumatology-Osteoarthritis Research Society International Criteria (OMERACT-OARSI criteria) response in 41% of the patients at the 3rd week and 19% at the 8th month. Improvement was also observed in other judgment criteria evaluating pain, function and quality of life and continued until the 8th month for some of the parameters. No serious adverse effect was observed. **Conclusions.** Spa treatment may improve the clinical status of patients with GOA and seems to be well tolerated.

Mots clés :

cure thermale ; arthrose généralisée ; créno-balnéothérapie ; fangothérapie

Résumé – La cure thermale dans le traitement de l'arthrose généralisée : étude préliminaire ouverte. Objectif. Étude ouverte prospective pour évaluer les effets de la cure thermale dans l'arthrose généralisée (AG). **Méthode.** Les patients présentant une AG ont été recrutés consécutivement dans un cabinet libéral. Le traitement thermal associait 6 sortes de soins différents par cycles de 2 jours, pendant 18 jours d'affilée : Berthollet (application locale de brume d'eau thermale), applications de boue, hydrothérapie, massages sous l'eau, exercices supervisés en piscine thermale, piscine d'hydromassage, bains avec hydrojets. Le critère de jugement principal était d'avoir au moins 50 % de patients avec une amélioration cliniquement pertinente à la fin du traitement. Les analyses statistiques ont été réalisées en intention de traiter. Il y avait un insu des thérapeutes. **Résultats.** Quarante-vingt dix-neuf patients ont été inclus entre le 7 mars et le 29 avril 2011. Ils ont tous été analysés pour le critère de jugement principal. Une amélioration cliniquement pertinente a été observée dans 61 % des cas, à la fin du traitement et 68 % au 8^e mois. Trente-trois pour cent des patients étaient dans un état cliniquement acceptable à 3 semaines et 75 % à 8 mois. Selon les critères *Outcome Measures in Rheumatology-Osteoarthritis Research Society International* (OMERACT-OARSI), 41% des patients étaient répondeurs à 3 semaines et 19 % à 8 mois. Une amélioration était observée également pour tous les autres critères de jugements évaluant la douleur la fonction et la qualité de vie à 3 mois et pour certains d'entre eux à 8 mois. Aucun effet indésirable grave n'a été observé. **Conclusions.** La cure thermale pourrait améliorer l'état clinique des patients souffrants d'AG et elle semble bien tolérée.

Abbreviations: see end of article.

1. Introduction

Osteoarthritis (OA) is by far the most common form of arthritis and one of the leading causes of pain and disability worldwide.^[1] Generalized OA (GOA) is the pattern of OA characterized with both central and peripheral joint involvement, and primary GOA is known to be the most common form of inherited OA.^[2,3] It is reported that people with GOA experience more squeal of their disorder and therefore have a relatively lower health status than people with knee or hip problems only. Moreover, women with a high number of joint groups affected by OA are reported to have a shorter life span.^[4] Despite its relatively high prevalence, polyarticular nature, limited treatment options and recognized genetic contribution, the study of GOA has lagged behind that of isolated knee OA.^[5]

As it often carries significant individual morbidity, the cost of OA to society is also significant, related to its high prevalence.^[2] Under these circumstances, the treatment of the disease gathers more attention. Since there is no cure for OA at present, treatment often focuses on management of symptoms such as pain, stiffness and mobility and so improving the quality of life.^[6]

Spa medicine, also defined as health resort medicine, is the medical field concerned with medical activities originated and derived in health resorts based on scientific evidence aiming health promotion, prevention, treatment and rehabilitation. Core elements are the use of natural mineral waters, gases and peloids for bathing, drinking and inhalation which refers to “(creno)balneotherapy”, the use of plain water (tap water) “hydrotherapy”, the use of climatic factors and “climatotherapy”.^[7] Balneotherapy is regarded as a non-pharmacological intervention for musculoskeletal disorders and is widely used in Europe, North Africa, Middle East and Asia for the treatment of OA.^[8,9] Although it was shown that GOA is the most prevalent rheumatologic disorder treated in spa centers in France,^[10] in our literature research, we did not find any trial evaluating the effect of balneotherapy on clinical parameters of patients with GOA.

With this open, observational, “real-time” study we aimed to evaluate the short and long term effect of spa therapy on the clinical status of patients with GOA.

2. Methods

2.1. Trial design

An open, prospective, observational study.

2.2. Participants

All participants were patients referred to Aix Les Bains by their local physicians to realize their spa treatments. They were recruited

from the outpatient clinic of a senior rheumatologist specialized in spa treatment (RF). The same physician performed the decision of inclusion or exclusion according to the results of physical examination, radiological and biological analyses, and he also prescribed and supervised the spa treatment.

Eligible participants were patients:

1- Diagnosed as GOA according to:

- Kellgren-Moore criteria: Heberden's nodes with diarthrodial joint OA;^[11] and/or
- American College of Rheumatology (ACR) criteria: OA of spine with at least 2 other localizations (peripheral, central or mix);^[12] and/or
- Dougados criteria: OA of the spine with bilateral digital or bilateral knee OA;^[13] and/or
- The criteria set proposed and tested by Forestier *et al*: OA in at least 3 localizations (one can be spine) or OA in 2 localizations with a family history of OA and/or symmetrical articular involvement;^[14]

And

2- Accepted to fill in the self-assessment questionnaires.

Patients under following conditions were excluded; refusal of involvement in the study, being illiterate, lack of social insurance, presence of any inflammatory arthritis (rheumatoid arthritis, Sjögren syndrome, systemic lupus erythematosus, scleroderma, polymyalgia rheumatica, seronegative spondyloarthropathy), secondary OA (posttraumatic, metabolic or endocrine), diffuse idiopathic skeletal hyperostosis (Forestier's disease), fibromyalgia syndrome, fracture or acute injury caused by a trauma or osteoporosis, algodystrophy, early onset scoliosis, rotator cuff syndrome, or an active tumor.

2.3. Study settings

The recruitment of the study took place at Aix-Les-Bains National Thermal Center between the dates March 7th-April 29th 2011. Aix-Les-Bains is the 3rd largest spa city in France and it is located in Savoie Department of Rhône-Alpes Region. The National Thermal Center is the main spa establishment of the city and delivers service to approximately 25 000-30 000 patients annually. There are 164 health care providers working in the center, mainly hydrotherapists (95%) and kinesitherapists (5%), all completed at least 3 years of training program in the treatment field.

2.4. Interventions

Patients had received their daily spa treatments during 18 days (6 days/week, except Sundays, for 3 weeks) in Aix Les Bains National Thermal Center. Treatment protocols were designed

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