

## **Mud-bath therapy in addition to usual care in bilateral knee osteoarthritis: economic evaluation alongside a randomized controlled trial**

### **ABSTRACT**

**Objective:** To perform a cost-effectiveness analysis of mud-bath therapy (MBT) in addition to usual treatment compared to usual treatment alone in patients with bilateral knee osteoarthritis (OA).

**Methods:** An economic evaluation alongside a randomized controlled trial was conducted. Patients were randomly assigned to receive either a 2 weeks cycle of MBT in addition to their usual treatment or to continue routine care alone. The European Quality-of-Life Questionnaire-5 Dimensions (EQ-5D) questionnaire was administered at baseline, 2 weeks, 3, 6, 9, and 12 months. Direct healthcare resource consumption data up until 12 months were derived from a daily diary given to patients and returned at prescheduled follow-up visits.

**Results:** A total of 103 patients were included (MBT = 53, control = 50). Overall, patients in the MBT group accrued on average 0.835 ( } 0.10 standard deviation, SD) quality adjusted life years (QALYs) compared to 0.753 ( } 0.11 SD) in the control group ( $p < 0.001$ ). Average direct costs per patient (€303 vs €975,  $p < 0.001$ ) were higher in the control group, primarily because of hospitalization for total knee replacement and use of intra-articular hyaluronic acid. Bootstrapping replications of costs and QALYs sample distributions consistently indicated that the MBT therapy combined with standard therapy represents a dominant strategy vis-à-vis standard therapy alone. The probability of MBT being cost-effective at standard cost-effectiveness thresholds (e.g. 20,000 €/QALY) is 100%.

**Conclusion:** The results of this cost-effectiveness analysis support the use of the mud bath therapy as mid-term complementary therapy in the management of knee OA.

### **Significance & Innovations**

- It has been shown that a cycle of mud-bath therapy (MBT) in addition to standard treatment in patients with knee osteoarthritis provides a significant improvement in painful symptoms and functional capacities compared to standard treatment alone
- This study reports on the cost-effectiveness of MBT in addition to usual care versus usual care alone based on an economic evaluation performed alongside a randomized controlled trial
- This cost-effectiveness analysis shows a favourable economic profile of a 12-session cycle of MBT in addition to usual care versus usual care alone, with costs savings of about €672 per patient and 0.08 quality adjusted life years gained over a 12 months follow-up