**FANGO SULFUREO DI SIRMIONE:**
**BIBLIOGRAFIA IN RELAZIONE AD AZIONI ED EFFETTI SU FUNZIONI ED APPARATI**

## OSTEOARTRITE

- Ciani O, Pascarelli NA, Giannitti C, Galeazzi M, Meregaglia M, Fattore G, Fioravanti A. **Mud-Bath Therapy in Addition to Usual Care in Bilateral Knee Osteoarthritis: An Economic Evaluation Alongside a Randomized Controlled Trial.** Arthritis Care Res (Hoboken). 2017 Jul;69(7):966-972. doi: 10.1002/acr.23116. Epub 2017 Jun 7.Abstract

**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-week cycle of MBT in addition to their usual treatment or to continue routine care alone. The EuroQol 5-domain questionnaire was administered at baseline, 2 weeks, and at 3, 6, 9, and 12 months. Direct health care resource consumption data up until 12 months were derived from a daily diary given to patients and returned at prescheduled followup visits.

RESULTS:
A total of 103 patients were included (n = 53 for MBT patients; n = 50 for controls). Overall, patients in the MBT group accrued mean ± SD 0.835 ± 0.10 quality-adjusted life years (QALYs) compared to 0.753 ± 0.11 in the control group (P < 0.001). Average direct costs per patient (€303 versus €975; P < 0.001) were higher in the control group, primarily because of hospitalization for total knee replacement and use of intraarticular hyaluronic acid. Bootstrapping replications of costs and QALY sample distributions consistently indicated that the MBT therapy combined with standard therapy represents a dominant strategy as compared with 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 MBT as midterm complementary therapy in the management of knee OA.

*Richiedi il testo completo: https://www.ncbi.nlm.nih.gov/pubmed/27723261*

## REUMATOLOGIA

- Gudmundsdottir AB, Omarsdottir S, Brynjolfsdottir A, Paulsen BS, Olafsdottir ES, Freysdottir J. **Exopolysaccharides from Cyanobacterium aponinum from the Blue Lagoon in Iceland increase IL-10 secretion by human dendritic cells and their ability to reduce the IL-17+RORγt+/IL-10+FoxP3+ ratio in CD4+ T cells**. Immunol Lett. 2015 Feb;163(2):157-62. doi: 10.1016/j.imlet.2014.11.008. Epub 2014 Dec 9

**Abstract**
Regular bathing in the Blue Lagoon in Iceland has beneficial effects on psoriasis. Cyanobacterium aponinum is a dominating member of the Blue Lagoon's microbial ecosystem. The aim of the study was to determine whether exopolysaccharides (EPSs) secreted by C. aponinum (EPS-Ca) had immunomodulatory effects in vitro. Human monocyte-derived dendritic cells (DCs) were matured in the absence or presence of EPS-Ca and the effects were determined by measuring the secretion of cytokines by ELISA and the expression of surface

molecules by flow cytometry. DCs matured with EPS-Ca at 100 µg/ml secreted higher levels of IL-10 than untreated DCs. Subsequently, DCs matured in the presence or absence of EPS-Ca were co-cultured with allogeneic CD4(+) T cells and their effects on T cell activation analysed by measuring expression of intracellular and surface molecules and cytokine secretion. Supernatant from allogeneic T cells co-cultured with EPS-Ca-exposed DCs had raised levels of IL-10 compared with control. A reduced frequency of IL-17(+)RORγt(+) T cells was observed when co-cultured with EPS-Ca-exposed DCs and a tendency towards increased frequency of FoxP3(+)IL-10(+) T cells, resulting in a lower IL-17(+)RORγt(+)/FoxP3(+)IL-10(+) ratio. The study shows that EPSs secreted by C. aponinum stimulate DCs to produce vast amounts of the immunosuppressive cytokine IL-10. These DCs induce differentiation of allogeneic CD4(+) T cells with an increased Treg but decreased Th17 phenotype. These data suggest that EPSs from C. aponinum may play a role in the beneficial clinical effect on psoriasis following bathing in the Blue Lagoon.

*Richiedi il testo completo: https://www.ncbi.nlm.nih.gov/pubmed/25499021*

- Burguera EF, Meijide-Failde R, Blanco FJ. **Hydrogen Sulfide and Inflammatory Joint Diseases**. Curr Drug Targets. 2017;18(14):1641-1652. doi: 10.2174/1389450117666160829112824.

**Abstract**
BACKGROUND:
Rheumatoid arthritis (RA) and osteoarthritis (OA) are widespread rheumatic diseases characterized by persistent inflammation and joint destruction. Hydrogen sulfide (H2S) is an endogenous gas with important physiologic functions in the brain, vasculature and other organs. Recent studies have found H2S to be a mediator in inflammatory joint diseases.

OBJECTIVE:
This review summarizes the recent literature in this area highlighting relevant developments.

CONCLUSIONS:
Several authors have found that H2S exhibited anti-inflammatory, anti-catabolic and/or anti-oxidant effects in rodent models of acute arthritis and in in vitro models using human synoviocytes and articular chondrocytes from RA and OA tissues. The earliest studies used fast-dissolving salts, such as NaSH, but GYY4137, which produces H2S more physiologically, shortly appeared. More recently still, new H2S-forming compounds that target mitochondria have been synthesized. These compounds open exciting opportunities for investigating the role of H2S in cell bioenergetics, typically altered in arthritides. Positive results have also been obtained when H2S is administered as a sulphurous water bath, an option meriting further study. These findings suggest that exogenous supplementation of H2S may provide a viable therapeutic option for these diseases, particularly in OA.

*Richiedi il testo completo: https://www.ncbi.nlm.nih.gov/pubmed/27572743*

- Paoloni M, Bernetti A, Brignoli O, Coclite D, Fraioli A, Masiero S, Napoletano A, Quirino N, Rengo F, Ruosi C, Viora U, Vitale M, Santilli V. **Appropriateness and efficacy of Spa therapy for musculoskeletal disorders. A Delphi method consensus initiative among experts in Italy**. Ann Ist Super Sanita. 2017 Jan-Mar;53(1):70-76. doi: 10.4415/ANN_17_01_13.

**Abstract**
OBJECTIVE:

The aim of the study was to identify the main aspects concerning appropriateness and efficacy of Spa therapy for musculoskeletal pathologies.

METHODS:

A committee of 8 experts from Italian universities, public hospitals, territorial services, research institutes and patient associations was set up. Clinicians from Italian medical centers specialized in rheumatology, rehabilitation and thermal medicine took part in a Delphi process aimed at obtaining consensus statements among the participants.

RESULTS:

Large consensus was obtained for statements grouped under the following main themes: treatment indications; choice of treatment modality and treatment efficacy.

CONCLUSIONS:

The experts developed a number of consensus statements which may be used as a practical reference to guide the choice of physicians to treat musculoskeletal diseases with Spa therapy.

*Richiedi il testo completo: https://www.ncbi.nlm.nih.gov/pubmed/28361808*