

[Related Articles, Books, LinkOut](#)

### **Clinical improvement and serum amino acid levels after mud-therapy**

**Bagnato G, De Filippis L, Morgante S, Morgante ML, Farina G, Caliri A, Romano C, D'Avola G, Pinelli P, Calpona P, Strega P, Resta M, De Luca G, Di Giorgio R**  
**Int J Clin Pharmacol Res 2004, 24 (2-3) ; 39-47**

**Department of Rheumatology, University of Messina, Messina, Italy.**

Spa therapy is an ancient approach to degenerative diseases such as osteoarthritis, but until today this tradition has been predominantly empiric and intuitive and few studies have focused on the biological changes derived from this treatment. We assessed the clinical efficacy and variations in amino acid concentrations in serum samples from patients with knee osteoarthritis who underwent spa therapy and put forward an explanation of their role in clinical improvement. Thirty-one patients with knee osteoarthritis who underwent spa therapy underwent a clinical evaluation, and serum amino acid levels were assayed before and after a cycle of balneotherapy and mud-pack therapy. The thermal treatments were carried out in Sciacca. Analysis of the data showed a significant reduction in pain and improvement in joint motility. Serum concentrations of tryptophan, cysteine and citrulline were significantly higher than at baseline. No significant differences were observed in serum levels of the remaining free amino acids. The results of this study confirm the efficacy of spa therapy in the treatment of osteoarthritis. A possible role for changes in serum amino acid concentration is discussed. PMID: 15689050 [PubMed - indexed for MEDLINE]