

**EFFECT OF COMPLEX DECONGESTIVE PHYSIOTHERAPY  
ON GENE EXPRESSION FOR THE INFLAMMATORY  
RESPONSE IN PERIPHERAL LYMPHEDEMA**

**E. Földi, A. Sauerwald, B. Hennig**

Földiklinik for Lymphology (EF), Hinterzarten, Scientific & Regulatory Affairs Medical (AS), Beiersdorf AG, Hamburg, and Laboratory of Molecular Biological Research & Analysis (BH), Freiburg, Germany

*ABSTRACT*

*Complex decongestive physiotherapy (CDP), consisting of manual lymph drainage, compression bandaging, remedial exercises and skin care, mobilizes accumulated edema fluid and increases lymph flow. On the other hand, it also has a beneficial therapeutic effect on fibrosclerosis. Because little is known of its possible mode of action on a molecular level, this preliminary study evaluated CDP in patients with peripheral leg lymphedema as to the potential role of gene expression in the inflammatory response. The quantitative expression of genes for CD14, interferon- $\gamma$  receptor (IFN $\gamma$ R), tumor necrosis factor- $\alpha$  (TNF $\alpha$ ), integrin  $\alpha_4\beta_1$  (VLA-4), tumor necrosis factor receptor p55 (TNFR1) and CD44 (standard form) was examined in 9 patients with primary or secondary leg lymphedema before and after phase 1 of CDP. Overall, there was a decrease of expression of these pro-inflammatory genes after CDP, suggesting that biologic mechanisms implicated in the inflammatory cascades in other disorders are also involved in the fibrosclerotic reactivity in lymphedema. However, whereas each patient acted as his or her own control before and after CDP, gene expression in normal patients and normal limbs before and after CDP needs to be examined before the full meaning of these observations can be understood.*