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## **Combined spa-exercise therapy is effective in patients with ankylosing spondylitis: a randomized controlled trial.**

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### **OBJECTIVE:**

To determine the efficacy of combined spa-exercise therapy in addition to standard treatment with drugs and weekly group physical therapy in patients with ankylosing spondylitis (AS).

### **METHODS:**

A total of 120 Dutch outpatients with AS were randomly allocated into 3 groups of 40 patients each. Group 1 (mean age 48 +/- 10 years; male:female ratio 25:15) was treated in a spa resort in Bad Hofgastein, Austria; group 2 (mean age 49 +/- 9 years; male:female ratio 28:12) in a spa resort in Arcen, The Netherlands. The control group (mean age 48 +/- 10 years; male:female ratio 34:6) stayed at home and continued their usual drug treatment and weekly group physical therapy during the intervention weeks. Standardized spa-exercise therapy of 3 weeks duration consisted of group physical exercises, walking, correction therapy (lying supine on a bed), hydrotherapy, sports, and visits to either the Gasteiner Heilstollen (Austria) or sauna (Netherlands). After spa-exercise therapy all patients followed weekly group physical therapy for another 37 weeks. Primary outcomes were functional ability, patient's global well-being, pain, and duration of morning stiffness, aggregated in a pooled index of change (PIC).

### **RESULTS:**

Analysis of variance showed a statistically significant time-effect ( $P < 0.001$ ) and time-by-treatment interaction ( $P = 0.004$ ), indicating that the 3 groups differed over time with respect to the course of the PIC. Four weeks after start of spa-exercise therapy, the mean difference in PIC between group 1 and controls was 0.49 (95% confidence interval [CI] 0.16-0.82,  $P = 0.004$ ) and between group 2 and controls was 0.46 (95% CI 0.15-0.78,  $P = 0.005$ ). At 16 weeks, the difference between group 1 and controls was 0.63 (95% CI 0.23-1.02,  $P = 0.002$ ) and between group 2 and controls was 0.34 (95% CI -0.05-0.73;  $P = 0.086$ ). At 28 and 40 weeks, more improvement was found for group 1 compared with controls ( $P = 0.012$  and  $P = 0.062$ , respectively) but not for group 2 compared with controls.

### **CONCLUSION:**

In patients with AS, a 3-week course of combined spa-exercise therapy, in addition to drug treatment and weekly group physical therapy alone, provides beneficial effects. These beneficial effects may last for at least 40 weeks.