

The effect of balneotherapy on ambulatory blood pressure.

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CONTEXT: Balneotherapy, a treatment that includes carbon dioxide and mud baths as well as massages and physical therapy, is successfully used in the treatment of rheumatic pain and other disorders such as cardiovascular and gynecological disease.

OBJECTIVE: To study the effect of a 3-week treatment of balneotherapy on 24-hour ambulatory blood pressure in 35 patients.

DESIGN: Balneotherapeutic applications were applied between 2 and 5 times a week and had a duration of 20 minutes. The mean 24-hour blood pressure, daytime blood pressure (7 AM to 10 PM), nighttime blood pressure (10 PM to 6 AM), nighttime dipping, and 24-hour blood pressure variability were measured. The effect of balneotherapy was evaluated using analysis of variance. In addition, the circadian variation of blood pressure was calculated using a cosinor analysis.

SETTING: The Austrian spa resort Bad Tatzmannsdorf. **PARTICIPANTS:** 35 balneotherapy patients (15 men, 20 women).

INTERVENTION: Balneotherapy.

MAIN OUTCOME MEASURES: 24-hour ambulatory blood pressure was measured with an ambulatory monitor using an oscillometric method.

RESULTS: The results indicated that the 24-hour blood pressure and day- and nighttime blood pressure of patients with medium and high initial values decreased significantly ($P < .05$) after 3 weeks of balneotherapy, whereas patients with low blood pressure showed almost no change. The 24-hour blood pressure variation pattern of patients with medium values remained nearly unchanged during the balneotherapy. In contrast, a clear improvement in the circadian variation variables of patients with high initial blood pressure could be detected at the end of balneotherapy.

CONCLUSION: Patients with medium and, especially, higher initial blood pressure values seem to benefit from balneotherapy.

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