

Effects of daily activities on ambulatory blood pressure during normal menstrual cycle in normotensive women

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摘要

Abstract

The purpose of this study was to determine whether (1) there is a menstrual phase effect on blood pressure (BP) and heart rate (HR), and (2) the effects of physical effort, posture, or moods on BP and HR is mediated by the menstrual phase. Twelve normotensive women, aged between 28 and 50, with normal menstrual cycles were studied. BP was measured at 30- to 60-min intervals during a 24-hr period using an ambulatory BP monitor on Days 1, 8, 15, and 22 of the menstrual cycle. Participants were asked to report their posture, physical effort, and mood ("annoyed," "tense," and "happy") on 5-point Likert-type scales each time the ambulatory BP monitor took measurements. Systolic BP (SBP) was lower on Day 8 of the cycle. Diastolic BP (DBP) and HR were lower on Days 1 and 8. Daytime SBP was affected by the time of the day and posture, but not by moods, whereas daytime DBP was affected by posture and levels of tenseness. The level of physical effort only affected HR, not BP. The average daytime physical and emotional variables had little influence over the average daytime BP. In 12 normotensive women with a normal menstrual cycle, SBP was lower during the follicular phase and DBP and HR were lower during the follicular phase and menstruation even after controlling the effects of other factors. Physical activity or moods had only momentary effects on BP or HR. A cross-validation statistical method used is suggested to study how individuals are affected by various factors. With the use of this method, the inclusion of menstrual phase in the model improved the prediction of SBP for 5 out of the 12 women studied.