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Influence of geomagnetic activity and atmospheric pressure on human arterial pressure during the solar cycle 24

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Abstract

We performed a study of the systolic (SBP) and diastolic (DBP) arterial blood pressure behavior under natural variables such as the atmospheric pressure (AtmP) and the horizontal geomagnetic field component (H). We worked with a sample of 304 healthy normotense volunteers, 152 men and 152 women, with ages between 18 and 84 years in Mexico City during the period 2008-2014, corresponding to the minimum, ascending and maximum phases of the solar cycle 24. The data was divided by gender, age and day/night cycle. We studied the time series using three methods: Correlations, bivariate and superposed epochs (within a window of three days around the day of occurrence of a geomagnetic storm) analysis, between the SBP and DBP and the natural variables (AtmP and H). The correlation analysis indicated correlation between the SBP and DBP and AtmP and H, being the largest during the night. Furthermore, the correlation and bivariate

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