Hypertension. 2004 Jan 19 [Epub ahead of print] Related Articles, Links

Daily Nighttime Melatonin Reduces Blood Pressure in Male Patients With Essential Hypertension.

Scheer FA, Van Montfrans GA, Van Someren EJ, Mairuhu G, Buijs RM.

Netherlands Institute for Brain Research, the Department of Internal Medicine, Academic Medical Center, and VU University Medical Center, Amsterdam, The Netherlands.

Patients with essential hypertension have disturbed autonomic cardiovascular regulation and circadian pacemaker function. Recently, the biological clock was shown to be involved in autonomic cardiovascular regulation. Our objective was to determine whether enhancement of the functioning of the biological clock by repeated nighttime melatonin intake might reduce ambulatory blood pressure in patients with essential hypertension. We conducted a randomized, double-blind, placebo-controlled, crossover trial in 16 men with untreated essential hypertension to investigate the influence of acute (single) and repeated (daily for 3 weeks) oral melatonin (2.5 mg) intake 1 hour before sleep on 24-hour ambulatory blood pressure and actigraphic estimates of sleep quality. Repeated melatonin intake reduced systolic and diastolic blood pressure during sleep by 6 and 4 mm Hg, respectively. The treatment did not affect heart rate. The day-night amplitudes of the rhythms in systolic and diastolic blood pressures were increased by 15% and 25%, respectively. A single dose of melatonin had no effect on blood pressure. Repeated (but not acute) melatonin also improved sleep. Improvements in blood pressure and sleep were statistically unrelated. In patients with essential hypertension, repeated bedtime melatonin intake significantly reduced nocturnal blood pressure. Future studies in larger patient group should be performed to define the characteristics of the patients who would benefit most from melatonin intake. The present study suggests that support of circadian pacemaker function may provide a new strategy in the treatment of essential hypertension.