

Association of mid-day naps occurrence and duration with bp levels in hypertensive patients. a prospective observational study

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Introduction: Mid-day sleep represents a habit that now days is almost a privilege due to the increased workload and intense daily routine. Several studies have assessed the association of sleep time with blood pressure levels. This study had the purpose to assess the effect of mid-day sleep on blood pressure levels in hypertensive patients.

Methods: We prospectively studied 386 patients (200 males and 186 females mean age 61.4±11.9) with arterial hypertension. In all patients, mid-day sleep time (in minutes), office BP, ambulatory blood pressure monitoring (ABPM), pulse wave velocity (PWV), life style habits, anthropometric characteristics, augmentation index and a standard doppler and tissue doppler echocardiography evaluation was performed and recorded.

Results: Patients with mid-day sleep had significantly lower PWV levels (9.29±1.64 m/sec vs 10.41±2.27 m/sec, p<0.05), day time systolic ABPM (126.18±10.25 mmHg vs 131.45±13.21 mmHg, p<0.05), night time ABPM (114.97±11.23 mmHg vs 122.56±15.13 mmHg, p<0.005), and average systolic ABPM (124.27±10.2 mmHg vs 130±12.93 mmHg, p<0.05) as well as decreased left atrium diameter (39.17±4.63 mm vs 41.6±4.89 mm, p<0.05), in confront to hypertensive patients without mid-day sleep. No difference was observed in office systolic BP levels (138.1±16.6 mmHg vs 141.1±30.6 mmHg, p=ns). In addition, the duration of mid-day sleep was highly associated with the burden of arterial hypertension. Increase (in minutes) of mid-day sleep was associated with decrease hypertension grade (-16.22±6.25, [95% C.I.] 28.51– 3.93, p<0.05), day time systolic ABPM (-1.03±0.21, [95% C.I.] -1.44–0.61, p<0.001), average systolic ABPM (-0.96±0.21, [95% C.I.] -1.38 to -0.53, p<0.001), and with increased dipping status (16.61±5.73, [95% C.I.] 5.33–27.9, p<0.005). Dippers present on average 16.6 minutes more mid-day sleep in confront to non-dippers. Confounders such as age, gender, BMI, smoking status, salt, alcohol, exercise and coffee intake didn't influence the above results.

Conclusions: Mid-day sleep influence hypertension burden as well as dipping status, PWV and LA diameter. The longer the mid-day sleep, the lower the systolic BP levels.