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Title: Nocturnal hypertension, nondipping phenomenon and target organ damage in osa patients - the bad and the worse

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Body: Background: Nocturnal blood pressure (NBP) abnormalities are often encountered in OSA patients. Both phenomena are associated with increased cardiovascular morbidity and mortality. Aim: To determine the prevalence of target organ damage (TOD) in OSA patients with nocturnal hypertension (NBP>120/70) - NH, nocturnal normotensive dippers (NBP fall >10%) – NND and nocturnal normotensive nondippers (NBP fall<10%) Materials and methods: 64 patients with newly diagnosed OSA participated in the study. OSA was verified by a polysomnography. All patients had controlled hypertension (daytime BP <140/90). An ambulatory 24-hour BP monitoring divided participants into: 29 (NH) - nocturnal hypertensives, 18 (NND) - nocturnal normotensive dippers, 17 (NNN) – nocturnal normotensive nondippers. Anthropological, glucometabolic and sleep study characteristics were collected. Cardiac damage was assessed by a standard echocardiography; renal by microalbuminuria and vascular by ultrasonography of the carotid vessels. Results: The three groups did not show large discrepancies regarding anthropological and metabolic parameters. The sleep study characteristics were also similar. The mean daytime BP profiles in NH, NND and NNN were respectively – mean systolic –131,26/132,9/117,1mmHg; mean diastolic –83,1/79,8/68,05 mmHg. Cardiac damage was met in 50% of NND, 70,5% of NNN and in 62,5% of NH. Microalbuminuria was found in 5% of NNN and NND and in 31% of NH. Vessel damage was commonest in NH – 68,9%. The prevalence in NNN and NND was similar – 57 vs.58,8%. Conclusions: In comparison to the nondipping pattern, NH in OSA patients is associated with greater prevalence of renal and vascular damage.