Endocrinol Diabetes Nutr. 2021;68(Espec Cong 1):69

Endocrinología, Diabetes y Nutrición

P-017 - Circadian blood pressure pattern in patients with type 1 diabetes mellitus and cardiovascular autonomic subclinical dysfunction. Does it worsen with the association of peripheral arterial stiffness?

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Resumen

Objectives: Cardioautonomic neuropathy (CAN) associate an abnormal pattern in blood pressure (BP). The presence of arterial stiffness (AS) in patients with CAN may additionally alter circadian BP regulation. We aimed to evaluate the circadian rhythm of BP in patients with type 1 diabetes (DM1) and CAN, presenting with or without AS.

Methods: Case-control study patients with DM1 and CAN with (n = 28) or without (n = 24) AS as defined by an ankle-brachial index (ABI) above 1,2. All the patients included had a diagnosis of CAN diagnosed by BP and heart rate responses to active standing and Ewing and Clarke tests. We used a modification of the Ewing score to rate the presence of CAN, which scored HR variability to deep breathing, Valsalva's maneuver, and orthostatism, as well as the response of BP to active standing. All studied patients underwent 24-hour ambulatory BP monitoring. The device was set to obtain BP readings at 30-minute intervals during the day and at 60-minute intervals during the night. Absence of nocturnal decrease in BP – "*non-dipping*" pattern – was defined by a daytime to nighttime decrease in mean BP smaller than 10%.

Results: Mean age was 40 ± 11 years-old and mean duration of diabetes was 22 ± 10 years. Mean HbA_{1c} was 7.9 ± 1.5%. A "*non-dipping*" pattern was observed in 28 patients (54%) regardless of the presence or absence of AS. Age, waist circumference, BMI, HbA_{1c}, and 30:15 ratio were introduced as independent variables into a multiple regression analysis. The stepwise model (R^2: 0.113, p = 0.016) retained only HbA_{1c} levels (?: -0.333, 95% confidence interval [CI]: -3.10 to -0.33) as significant predictor of the percentage of nighttime decrease in mean BP.

Conclusions: A *non-dipping* pattern in BP is very common in patients with DM1 presenting with subclinical CAN and is associated with a poorer metabolic control. On the contrary, coexistence of AS is not associated with abnormalities in circadian BP regulation.