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**Impact of Sleep Disordered Breathing on the occurrence of arterial hypertension in a large French population-based epidemiological cohort**

**European Society of Hypertension Congress, April 11-14, 2021, Virtual congress**

**ABSTRACT**

**BACKGROUND** - There is a strong association between Sleep Disordered Breathing (SDB) and arterial hypertension but whether the link is causal remains unclear. Many studies, often limited by small sample size, suggested that SDB could induce arterial hypertension. The aim of this study was to assess the impact of SDB on the occurrence of arterial hypertension, and to identify its determinants on the basis of Berlin Questionnaire's (BQ) components. **METHODS** - Data came from participants of the French population-based CONSTANCES cohort, aged 18 to 69 years, included between 2013 and 2016, screened for SDB in 2017 using BQ who had no history of hypertension and blood pressure <140/90 mmHg at the inclusion visit. Occurrence of arterial hypertension was self-declared in yearly CONSTANCES questionnaires, between 2014 and 2017. Exposure variables were SDB diagnosis on the basis on BQ and its related sleeping symptoms (snoring and sleepiness). Odds Ratios (OR) were computed with their 95% Confidence Interval (95% CI) adjusted for age, sex, alcohol consumption, smoking and body mass index. **RESULTS** - Among 46,853 participants screened for SDB, 33,528 (71.6%) were considered as normotensive at inclusion. In this population, SDB prevalence on the basis of BQ was 8,0%. During a mean follow up of 2.5 years (SD=1.1), 5.0% of participants screened as SDB positive declared arterial hypertension occurrence vs 1.6% in participants without SDB (OR=1.92, 95% CI [1.52-2.42]). Hypertension occurrence increase with snoring (2,2% in snorers vs 1,3%, OR=1.39, 95% CI [1.16-1.67]), and with sleepiness (2.2% vs 1.5% OR=1.65, 95% CI [1.39-1.85] when fatigue occurred after-sleep and 2.0% vs 1.5% OR=1.47, 95% CI [1.22-1.77] during waking time). These associations were significant as soon as snoring or sleepiness happened at least once or twice a week, tended to increase with symptoms severity and remained significant for snoring regardless of its noise. **CONCLUSION** - These results suggest that SDB and its clinical determinants are associated with an increased risk of developing arterial hypertension. These subjects would benefit from intensive lifestyle and dietary measures and from SDB screening to prevent or delay the occurrence of arterial hypertension.

**KEYWORDS:** -

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