P91: THE EFFECTS OF DEVICE-GUIDED PACED BREATHING ON ARTERIAL STIFFNESS: IMPACT OF THE AUTONOMIC NERVOUS SYSTEM

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different heart rates (ELAUC/time & KEAUC/time) revealed the same results. PI correlated with KEAUC ($\log r^2 = 0.33$, $P = 0.008$) but not ELAUC ($\log r^2 = 0.154$, $P = 0.087$).

Conclusions: ELAUC and KEAUC were significantly lower in HM II. The correlation between KEAUC and PI suggests that pulsatility may have an important impact not only on the stretch of arteries but also on the energetics of blood flow. Future studies should evaluate the clinical meaning of these observations.

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**THE EFFECTS OF DEVICE-GUIDED PACED BREATHING ON ARTERIAL STIFFNESS: IMPACT OF THE AUTONOMIC NERVOUS SYSTEM**
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**Objective:** The autonomic nervous system (ANS) plays an important role in regulating blood pressure (BP), but its action on arterial stiffness (AS) is still debated. Here we examine if device-guided paced breathing (DGB) 1, via its action on ANS, can affect AS beyond its BP-lowering effect in hypertensive (HT) subjects.

**Design and Methods:** Central mean arterial pressure (MAP) (pulse-wave analysis of the radial artery, SphygmoCor, AtCor Medical, Australia), AS (carotid-femoral pulse wave velocity (cfPWV), SphygmoCor) and ANS activity (as high resolution heart rate variability (HRV) of low-frequency/high-frequency range (LF/HF)), (Schiller Medilog AR12plus, United States) were determined in HT subjects. All measurements were performed in supine position after 15 min of rest and subsequently repeated during supervised DGB therapy.

**Results:** 33 HT patients (18 male); age (mean $\pm$SD) 46 $\pm$13 years; BP 144 $\pm$19/86 $\pm$5 mmHg; cfPWV 9.9 $\pm$2.1 m/s were recruited. DGB decreased (mean [95% CI]) LF/HF by 0.15 [0.08, 0.22] as well as MAP (–6.7 [–8.4, –5.1] mmHg) and cfPWV (–1.1 [–0.8, –1.3] m/s), all $P < 0.01$. Bivariate analysis showed a positive correlation between decrease in HRV activity and reduction of cfPWV and MAP (β = 0.476 and ß = 0.402 respectively, both $P < 0.05$). The relationship between cfPWV and HRV activity was also still significant in multi-regression models adjusted for confounders (baseline PWV value and change in BP), $P < 0.05$.

**Conclusions:** DGB, via its action on ANS, affected both BP and AS in HT subjects. Reduction of cfPWV was not fully explained by the BP-lowering effect suggesting that the ANS may play an independent role in modulating AS.

**References**