P9.09: LARGE ARTERY FUNCTION AND VENTRICULAR ARTERIAL COUPLING DURING PROLONGED BED REST

F. Santini, C. Morizzo, E. Malshi, M. Kozakova, P. Salvi, S. Pedri, M. Pagani, C. Palombo


To link to this article: https://doi.org/10.1016/j.artres.2009.10.129

Published online: 14 December 2019
These findings indicate that normal/high CIMT values were present in both populations. Individual risk factors were only significantly correlated to risk factors if P was present.

Conclusion: assessment of only a CIMT in a population group above 45 years old does not add much to the standardized SCORE risk factor stratification. If a P is present, the addition of a measurement of CIMT plus P has incremental value to manage the subclinical disease in clinical practice. These findings underscore that in subclinical disease several frames should be assessed to maximize quality. CIMT alone adds little value to a SCORE measurement procedure.

Summary:
1. Plaque assessment seems a critical component to manage disease in clinical practice to provide incremental value in addition to SCORE and CIMT alone.
2. Multiple frames should be assessed to maximize yield on image quality.

**P9.09**

**LARGE ARTERY FUNCTION AND VENTRICULAR ARTERIAL COUPLING DURING PROLONGED BED REST**

F. Santini 1, C. Morizzo 2, E. Malshi 3, M. Kozakova 1, P. Salvi 4, S. Pedri 4, M. Pagani 3, C. Palombo 1

1University of Pisa, Department of Internal Medicine, Pisa, Italy
2University of Nancy, Department of Internal Medicine and Geriatrics, Nancy, France
3University of Milan, Internal Medicine Center of Neurovegetative Therapy, Milan, Italy
4Esopte SpA, Florence, Italy

**Background:** prolonged circulatory unloading associated with head-down tilt bed rest (HDTBR) is followed by cardiovascular deconditioning.

**Aim of the study** was to investigate to what extent large artery function and arterial-ventricular coupling (VA) are involved.

**Methods:** ten healthy male volunteers (age 23 ± 2) were studied before and after a 35-day HDTBR. Left ventricular (LV) volumes were investigated by echocardiography; carotid diameter and intima media thickness were assessed by high resolution ultrasound (Q-JMT, Esopte Europe). Contour Wave Analysis, performed by tonometer (PulsePen, DiaTecne, Milan Italy), was used to explore large artery function. Carotid-femoral pulse wave velocity (PWV) was also estimated (Compilior, Alam, Paris).

**Results:** no changes were observed for systolic and diastolic blood pressure, PWV and CIMT vs baseline, while LV volumes showed a significant reduction (p < 0.05). Arterial Elastance (Ea = end systolic pressure/stroke volume) and LV Elastance (Elv = end systolic pressure/ESV) increased after HDTBR (for Ea: 1.08 ± 0.198 vs 1.31 ± 0.21, p = 0.01; for Elv 1.478 ± 0.32 vs 1.765 ± 0.42, p = 0.04) with unchanged Ea/Elv (0.74 ± 0.09 vs 0.76 ± 0.1). Contour wave analysis showed no significant changes for Augmentation Index (Alx), a reduction for PPI (Pulse Pressure Index: pulse pressure/mean arterial pressure, from 0.55 ± 0.40 to 0.43 ± 0.09, p < 0.05), SEVR (subendocardial variability ratio: 1.84 ± 0.33 vs 1.55 ± 0.25, p = 0.008) and LVET (left ventricular ejection time: 304.6 ± 19.8 vs 291.5 ± 11.2 ms, p = 0.05), and an increase in heart rate (from 58 ± 2 to 73 ± 6, p < 0.05).

**Conclusions:** no significant alterations in intrinsic arterial stiffness and structure were detected after HDTBR. The observed changes in large arteries function appear secondary to changes in LV performance.