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Title: Cardiovascular responses to maximal expiratory pressure and valsalva maneuver in healthy men

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Body: Background/Aim: The respiratory assessment, mainly the measure of maximal expiratory pressure (MEP), has some contraindications because of similarity with the Valsalva maneuver (VM). The objective of this study was evaluated the cardiovascular responses during MEP and identify if this measure reproduces the responses obtained in VM. Methods: 19 healthy men participated in this study, 11 young (23 ± 3 years) and 8 middle-age (45 ± 3 years), divided in two groups – G1 and G2, respectively. They performed the VM (3x) with 40mmHg of oral pressure during 15s, at the sitting position using different mouthpieces (one with a leak of 2mm and another without). The MEP (5x) was performed from total lung capacity, according ATS/ERS in the same conditions of VM. We analyzed during VM and MEP: the heart rate variation (Δ HR) and systolic and diastolic blood pressure variation (Δ SBP, Δ DBP), and the MEP and Valsalva index (MEPI, VI). ANOVA three-way with Holm-Sidak post-hoc test ($p < 0.05$) was employed to analyses de effect of maneuvers, groups and mouthpiece. Results: We observed that VM have values of Δ SBP (VM: 11 ± 8 mmHg; MEP: 6 ± 6 mmHg), Δ HR (VM: 40 ± 11 bpm; MEP: 22 ± 6 bpm) and indexes (IV: 2.0 ± 0.4 ; IMEP: 1.5 ± 0.2) were bigger than MEP ($p < 0.05$), independent of the group or the mouthpiece. When we analyzed the groups influence we observed that G2 have higher values of Δ SBP and Δ DBP than G1 ($p < 0.05$), but not to VI and MEPI ($p = 0.001$). The mouthpiece effect was observed only in Δ DBP ($p = 0.006$) and the piece without leak had the biggest values. Conclusion: At the studied condition the MEP does not reproduce the cardiovascular responses observed in VM in healthy men. Financial support: CNPq, FAPESP.