



## Assessment of aortic stiffness by local and regional methods

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Résumé en anglais

The stiffness of large arteries has an important role in cardiovascular hemodynamics. Aortic stiffness (AoStiff) can be assessed non-invasively with regional and local methods. In this paper, we compared these two techniques for evaluating AoStiff. Our subjects comprised of 118 consecutive patients (85 men, mean age:  $49 \pm 14$  years). We evaluated regional AoStiff with carotid-femoral pulse wave velocity (PWV) measured with a tonometric technique and by bioelectrical impedance (BI) wave velocity (IWV). The local AoStiff was calculated from BI signals recorded at the chest. We used glyceryl trinitrate (GTN) to test the effect of peripheral vasodilatation on both methods in a subgroup of 52 patients (37 men, mean age:  $52 \pm 11$  years). We found a significant correlation between IWV and PWV measurements ( $r=0.88$ ,  $P<0.0001$ ) as well as between AoStiff and PWV measurements ( $r=0.75$ ,  $P<0.0001$ ). GTN administration decreased mean arterial blood pressure by 4% (95% confidence interval: 2-8%,  $P=0.002$ ) without significant changes in AoStiff and regional IWV. Local AoStiff is correlated with regional measurements and is not influenced by changes in arterial pressure because of systemic peripheral vasodilatation.

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