Supplemental material

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Supplementary Appendix 1

Baroreflex sensitivity assessment

Electrocardiograms (ECGs) and continuous systolic blood pressures (SBPs) were recorded over five minutes. Time series of the R-to-R intervals (RRIs) and the SBPs were constructed and saved for further analysis. Power spectral analysis of SBP and RRI was performed with Fast Fourier transformation to obtain the power in the low-frequency (0.04–0.15 Hz) and high-frequency (0.15–0.40 Hz) bands.[1]

Baroreflex sensitivity (BRS) was hereafter determined by seven methods and the average of these seven methods (BRS-average) were taken.[2] The seven methods are described in detail below.

The sequence methods (method 1 and 2)

The positive and negative sequence methods (BRS+/+ and BRS-/-) are based on identification of sequences of three or more consecutive heartbeats in which the SBP and the subsequent RRIs changed in the same direction at the minimum of 1 mmHg or 5 ms. The slopes of the regression lines between SBP and RR intervals were calculated for valid sequences with the correlation coefficient 0.85, and averages were taken as a measures of BRS+/+ and BRS-/-, correspondingly.[3,4]

The alpha-coefficient methods (method 3, 4 and 5)

Alpha-Coefficients were calculated as the square root of the ratio of the spectral powers of RRIs and SBP in the low-frequency range (BRS-αLF) (0.04–0.15 Hz), high-frequency range (BRS-αHF) (0.15–0.4 Hz) and the average of the two (BRS-αMean).[5]

The transfer function method (method 6)

Transfer function BRS (BRS-TF) was determined as the average of the SBP-RRI cross-spectrum divided by the SBP spectrum in the frequency range of 0.04–0.15 Hz, when coherence exceeded 0.5.[6]

The standard deviation method (method 7)

The standard deviation method (BRS-SD) is the ratio between the standard deviation of the RRI divided by the standard deviation of SBP as a measure of BRS.[2]

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