**Table S-1. Variability measures included in the study (definitions and justification).**

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| --- | --- | --- | --- |
| **Variability measure** | **Definition** | **Justification for its inclusion** | **References** |
| **Linear Analyses** |
| **Standard Deviation** | Dispersion of flow velocity values relative to the mean values. It is calculated as the square root of the variance  | Simple and easy, gross distinction between high and low variations | [5, 8,18]  |
| **Coefficient of Variation (CV)** | Standardized variability measure in the time domain equivalent to the standard deviation divided by the mean of the signal  | Low CV associated with survival in comatose patients after cardiac arrest. | [5,8, 12,18]  |
| **Non-linear measures of Fractality** |
| **Hurst coefficient** | Measure of self-similarity that quantifies the relative tendency of a time-series either to regress strongly to the mean or to cluster in a direction.  | Used as variability predictor in cerebral perfusion, and heart rate variability | [5,6,7] |
| **Fractal Dimension (D)** | Statistical index of complexity that compares how the detail in a fractal pattern changes with the different scales at which it is measured | Reliable and sensitive. It differentiated heart failure from healthy subjects and has been related with increased risk of mortality  | [13,14] |
| **Higuchi Exponent** | Measure of complexity calculated in the time domain. The calculations are carried out without phase space constructions. | A measure of fractal dimension that calculates a more precise and stable characteristic time scale than other methods. | [19] |
| **Non-linear measures of Deterministic Chaos** |
| **Correlation dimension †** | Index of overall complexity based on the correlation of pair of points chosen along the trajectory of a physiologic signal when its time evolution is displayed in a 2-dimensional figure |  It may be predictor of atrial fibrillation, aortic valve disorders and diabetic autonomic neuropathy | [9,15,20] |
| **Maximum Lyapunov exponent** | It quantifies the divergence or convergence of 2 trajectories from nearby points when followed across the time. | It differentiated between healthy subjects and those with neurologic disorders | [10,11,15] |
| **Variability measure** | **Definition** | **Justification for being included** | **References** |
| **Frequency domain analysis** | Transformation from time domain using spectral analysis. Contribution of certain frequency bands (very-low, low and high-frequency) to the total power of the underlying physiologic signal | It has been used to study differences between healthy and diseased subjects using physiologic signals such as heart rate, blood pressure and cerebral perfusion | [7,8,18] |

**†**The correlation dimension was estimated based on a modified version of the algorithm described by Grassberger and Procaccia.21,22