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BLOOD PRESSURE AND HEART RATE VARIABILITY OF RECENT AND LONG STANDING DIABETES

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Cardiovascular variability (blood pressure and heart rate) is affected by Diabetes Mellitus (DM). To study this effect, simultaneous non-invasive records of interbeat intervals (IBI) and beat-to-beat systolic blood pressure (SBP) variability of patients during supine, standing and controlled breathing tests were analyzed for recently diagnosed and long-standing DM patients comparing the results for 30 rigorously screened healthy subjects (Control). The most relevant changes as diabetes evolves are the loss of the cardio-respiratory modulation, standard deviation of the IBI detrended signal diminishes (Heart rate signal becomes more “rigid”) while for SBP increases, skewness for IBI approaches zero (Signal fluctuations gain symmetry), while for SBP becomes asymmetric and kurtosis increases (Fluctuations concentrate around the median). This may be due to a progressive decrease of parasympathetic and sympathetic activity to the heart and blood vessels as diabetes evolves.

BIOGRAPHY

Ana Leonor Rivera has completed her PhD from Universidad Nacional Autónoma de México (UNAM). She works at UNAM as researcher on Complex Systems. She has 50 publications that have been cited over 500 times and her publication H-index is 12. She is interested on blood pressure and heart rate variability.

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