

Erectile Function and Heart Rate Variability in Men under 40 Years Old

Authors : Rui Miguel Costa, Jose Pestana, David Costa, Paula Mangia, Catarina Correia, Mafalda Pinto Coelho

Abstract : There is lack of studies examining the relation of different heart rate variability (HRV) parameters with the risk of erectile dysfunction (ED) in younger men. Thus, the present study aimed at examining, in a nonclinical sample of men aged 19-39 years old (mean age = 23.98 years, SD = 4.90), the relations of risk of ED with the standard deviation of the heart rate (SD of HR), high and low frequency power of HRV, and low-to-high frequency HRV ratio. Eighty-three heterosexual Portuguese men completed the 5-item version of the International Index of Erectile Function (IIEF-5) and HRV parameters were calculated from a 5-minute resting period. Risk of ED was determined by IIEF-5 scores of 21 or less. Fifteen men (18.1%) reported symptoms of ED (14 with mild and one with mild to moderate symptoms). Univariate analyses of variance revealed that risk of ED was related to lesser SD of HR and lesser low-frequency power, the two HRV parameters that express a coupling of higher vagal and sympathetic tone. Risk of ED was unrelated to high-frequency power and low-to-high frequency HRV ratio. Further, in a logistic regression, the risk of ED was independently predicted by older age and lower SD of HR, but not by low-frequency power, having a regular sexual partner, and cohabiting. The results provide preliminary evidence that, in younger men, a coupling of higher vagal and sympathetic tone, as indexed by the SD of HR, is important for erections. Greater resting SD of HR might reflect better vascular and interpersonal function via vagal tone coupled with greater motor mobilization to pursue sexual intercourse via sympathetic tone. Many interventions can elevate HRV; future research is warranted on how they can be tailored to treat ED in younger men.

Keywords : erectile dysfunction, heart rate variability, standard deviation of the heart rate, younger men

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