HEART RATE VARIABILITY IN PATIENTS WITH ESSENTIAL TREMOR: A PRELIMINARY STUDY

M. Salsone,[1] B. Vescio,[1] R. Nistico',[1] Arabia,[2] G. Barbagallo,[2] A. Lupo,[2] A. Quattrone.[1,2]

[1]IBFM-CNR, Neuroimaging Research Unit, Catanzaro, Italy;

[2]Institute of Neurology, University "Magna Graecia" Catanzaro, Italy;

OBJECTIVE

To investigate circadian autonomic fluctuations in patients with Essential Tremor (ET) compared to patients with Parkinson's Disease (PD) by using of heart rate variability (HRV) analysis.

PATIENTS AND METHODS

This is a preliminary study including 15 patients with a diagnosis of ET and 15 patients with PD according to the established criteria.[1] [2] Each patient underwent an accurate clinical history and a videotaped neurological evaluation. Fahn-Tholosa and motor portion of the Unified Parkinson's disease (UPDRS-ME, section III) scales were used for clinical evaluation of ET and PD patients respectively. Cognitive status was assessed through the Mini-Mental State Examination. DAT-SPECT and cardiac MIBG scintigraphy were performed to support the clinical diagnosis of ET and PD. In all patients, we also measured the power spectral components of HRV in the frequency domain.[3] R-R intervals were taken from 24-hour ambulatory ECG recording. Selected variables considered were low-frequency (LF) influenced by sympathetic system and high-frequency (HF) influenced by parasympathetic system.

RESULTS

ET patients showed normal DAT-SPECT and cardiac MIBG scintigraphy whereas PD patients had decreased tracer uptake in both scintigraphies. HRV variables were significantly different between ET and PD. Patients with ET showed both LF than HF component power bands significantly higher than those of PD patients. At cutoff level of 590 ms2 for LF power band differentiated ET patients from those with PD with accuracy of 100% (Figure).

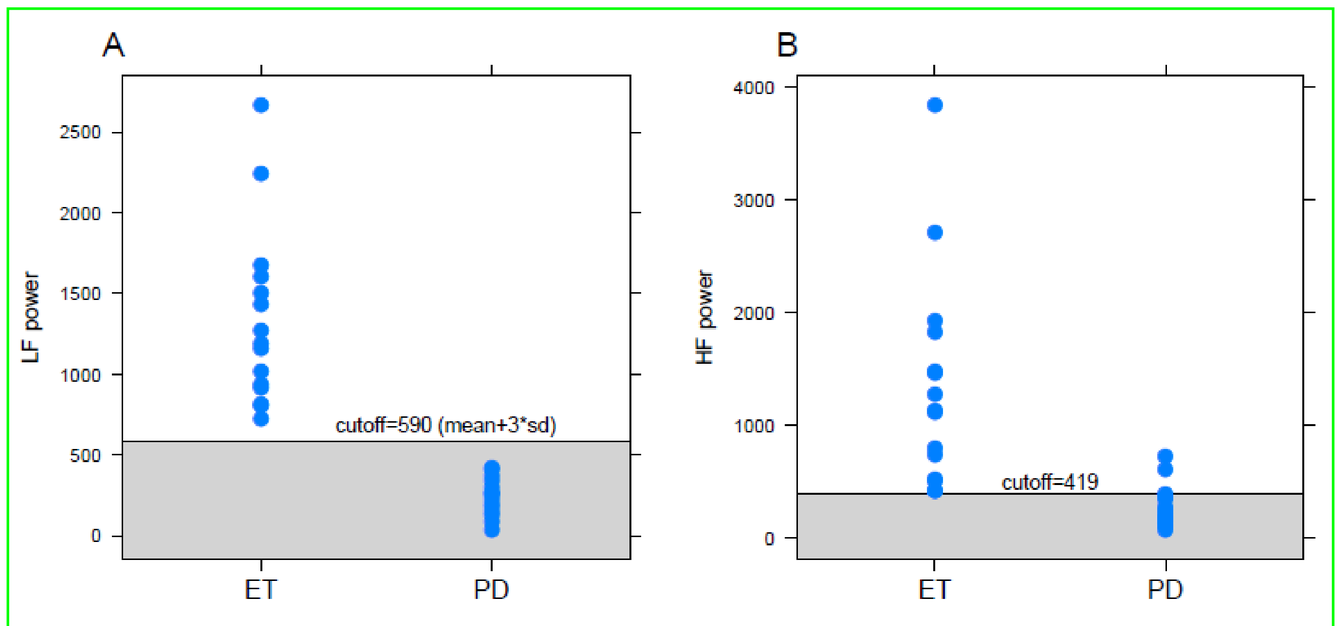

Figure. Upper limits of LF (low frequency) (590, light gray area) and HF (high frequency) components (419, light gray area) in ET and PD patients (A and B).

CONCLUSIONS

Our findings demonstrate, for the first time, that LF component power band distinguished ET patients from those with PD on an individual basis, thus indicating that HRV analysis may be a valid help in clinical practice for differentiating ET from PD in absence of DAT scan investigation.

REFERENCES

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