

## Heart Rate Variability in Patients with Psoriasis Treated with Etanercept Therapy

In their article, Potenza *et al.* evaluated the influence of etanercept therapy on autonomic cardiovascular regulation in young patients with moderate-to-severe psoriasis without cardiovascular risk factors by measuring the time domain and frequency domain heart rate variability (HRV) parameters from 5-minute electrocardiogram (ECG) recordings (1). The authors used low frequency (LF), high frequency (HF) power, and LF/HF ratio as indices of frequency domain HRV and standard deviation of normal-to-normal intervals (SDNN); the mean root square of the sum of the squares of differences between consecutive R-R intervals (RMSSD) was used as the index of time domain HRV. The authors found that 12-week etanercept therapy resulted in non-significant alterations in LF, HF, LF/HF ratio, SDNN, and RMSSD values. They concluded that treatment with etanercept in patients with moderate-to-severe psoriasis does not affect cardiovascular autonomic regulation and cardiovascular risk.

HRV is a well-established, rapid, and noninvasive tool for the evaluation of the modulation of the cardiac autonomic nervous system. HRV may also be a sensitive test for the detection of the cardiotoxicity of some chemotherapeutic agents (2). Methods for quantifying HRV are categorized as time domain and spectral or frequency domain. Traditionally, spectral parameters such as LF, HF, and total power have been analyzed from standard 5-minute ECG segments, whereas most laboratories require at least 18 hours of valid data to measure time domain parameters such as SDNN and RMSSD in a 24-hour recording. In addition, the measurement of LF and HF power components is usually given in absolute values of power (milliseconds squared) or percentage. LF and HF can also be calculated in normalized units, which represent the relative value of each power component in proportion to the total power. The representation of LF and HF in normalized units underlies the controlled and balanced behavior of the two branches of the autonomic nervous system. Moreover, the normalization tends to minimize the effect of the changes in total

power on the values of LF and HF components. Thus, unnormalized units should be presented in conjunction with normalized versions of the same variables whenever possible in order to completely describe the distribution of power in spectral components (2).

### References:

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2. Kleiger RE, Stein PK, Bigger JT. Heart rate variability: measurement and clinical utility. *Ann Noninvasive Electrocardiol* 2005;10:88-101.

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