

1. AUTONOMIC NERVOUS SYSTEM ACTIVITY PARAMETERS IN INDIVIDUALS WITH AFFECTIVE DISORDERS



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Introduction. Studies have shown a potential correlation between affective disorders and disturbances in the autonomic nervous system (ANS) activity, particularly heart rate variability (HRV). HRV is observed to be reduced in people suffering from affective disorders.

Aim of study. Highlighting the importance of using HRV as a biomarker for affective disorders.

Methods and materials. Research papers from the last 5 years, from specialized journals of the PubMed databases, were selected and analyzed using the following keywords: parasympathetic activity, sympathetic activity, affective disorders, autonomic nervous system, heart rate variability.

Results. Parameters known to quantify parasympathetic activity (e.g., high frequency (HF)-HRV and the root mean square of successive RR interval differences (RMSSD)) were observed to be lower in individuals with negative affect (emotions such as fear, anxiety and sadness). Moreover, reductions in the parasympathetic activity were shown to have a possible contribution to the onset and development of affective disorders, such as depression, through potential inflammatory pathways, increasing the level of pro-inflammatory cytokines. Low frequency (LF) and sympatho-vagal balance derived from the LF/HF ratio, used as indices of sympathetic activity, were revealed to be increased in individuals with negative affect, suggesting the involvement of the sympathetic outflow during those states. In comparison, studies imply that positive affect states may have less distinct signatures in heartbeat signals.

Conclusion. The consistent association between negative affect and a reduction in numerous HRV measures indicates a potential link between decreased parasympathetic activity and affective disorders. Variations in ANS activity could be a prospective biomarker for affective disorders, especially with the use of more complex non-linear models of the relationship between ANS and HRV, providing a promising path to understanding ANS and cardiac dynamics in affective disorders.