

1. Why study Heart Rate Variability (HRV) with Acupuncture: Stress has negative impacts on the cardiovascular system, sleep, mental alertness, and quality of life. The mental stress response includes, as a nervous system reflex, a significant change in autonomic nervous system activity: increased sympathetic activity with decreased parasympathetic activity, which can be measured as heart rate variability (HRV). Although acupuncture is not widely understood, its benefits are widely accepted across cultures. Despite the large number of clinical studies, the relationship between acupuncture and heart rate variability remains largely unknown. 

2. Why this study? 

Participants were asked to keep a daily diary documenting their acupuncture treatments, including the time of treatment and the duration of the treatment. Each participant was instructed to avoid any major changes in their lifestyle during the study period. The data was collected over a period of several months and was analyzed using appropriate statistical methods. The results indicated that acupuncture treatment had a significant impact on heart rate variability, with a decrease in both low frequency (LF) and high frequency (HF) components of HRV. The decrease in LF/HF ratio was found to be statistically significant, indicating a decrease in sympathetic activity and an increase in parasympathetic activity. The decrease in LF/HF ratio was found to be statistically significant, indicating a decrease in sympathetic activity and an increase in parasympathetic activity. This suggests that acupuncture may have a beneficial effect on heart rate variability, potentially reducing stress levels and improving overall health.

Materials and Methods 

8 acupuncture points were treated, including the following:

- ST 36 (Sanjiao 36) 
- LI 4 (Yangming 4) 
- ST 40 (Sanjiao 40) 
- SP 6 (Spleen 6) 
- CV 17 (Sanjiao 17) 
- CV 12 (Sanjiao 12) 
- ST 37 (Sanjiao 37) 
- ST 36 (Sanjiao 36)

All acupuncture treatments were administered by a licensed acupuncturist. Blood pressure was measured before and after each acupuncture treatment using an automated blood pressure monitor. Heart rate variability was calculated using the R-R interval method. The LF/HF ratio was calculated using the fast-Fourier transform method. Data was collected over a period of several months and was analyzed using appropriate statistical methods. The results indicated that acupuncture treatment had a significant impact on heart rate variability, with a decrease in both low frequency (LF) and high frequency (HF) components of HRV. The decrease in LF/HF ratio was found to be statistically significant, indicating a decrease in sympathetic activity and an increase in parasympathetic activity. This suggests that acupuncture may have a beneficial effect on heart rate variability, potentially reducing stress levels and improving overall health.

Conclusions

This study is part of an ongoing exploration using HRV as an additional biomarker for acupuncture effectiveness. The results suggest that acupuncture could have long-term effects on heart rate variability, potentially reducing stress levels and improving overall health. More detailed studies are needed to validate these findings and to better understand the mechanisms underlying the observed effects. The results also suggest that acupuncture may have potential applications in the treatment of various conditions, including stress-related disorders, sleep disorders, and other chronic conditions.

References


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