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RESEARCH ARTICLE

Effect of ice water ingestion on cardiac autonomic reactivity in healthy subjects

Savitri Parvatgouda Siddanagoudra[1], Priya Arjunwadekar[2]

[1]Department of Physiology, SDM College of Medical Sciences and Hospital, Dharwad, Karnataka, India, [2]Department of Physiology, JSS Medical College, Mysore, Karnataka, India

Correspondence to: Savitri Parvatgouda Siddanagoudra, E-mail: putti50919@gmail.com

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ABSTRACT

Background: Studies have shown a significant relationship between the autonomic nervous system and cardiovascular mortality. In autonomic failure patients, water drinking has been shown to rise in blood pressure, bradycardia, and low heart rate variability (HRV). Previous studies have shown gaps in acute effects of ice water intake, in healthy subjects. This study aimed to record HRV in healthy subjects after ice water ingestion. **Aims and Objectives:** To assess frequency domain parameters of HRV before and after ingestion of water at room temperature (control group) and cold water (study group) in healthy subjects. **Material and Methods:** This cross-sectional study included total 80 healthy, both gender, subjects between the age group of 18-24 years were randomly assigned into two groups. Study group ingested ice water and control group ingested normal room temperature water. Before and after water ingestion, HRV parameters were recorded and compared. Statistically data were analyzed by student's paired and unpaired *t*-test. **Results:** High frequency power (HFP) (858.23 ± 242 vs. 964.72 ± 232.2, $P < 0.001$), total power (2280 ± 524. 64 vs. 2450.14 ± 449.4, $P = 0.01$), and very low frequency power (743.4 ± 170.12 vs. 813.2 ± 103, $P = 0.01$) were increased whereas low/high frequency power ratio (LHR) (1.374 ± 0.4 vs. 1.118 ± 0.41, $P = 0.03$), were significantly reduced after ice water ingestion in study group compared to controls. **Conclusion:** Ice water ingestion increases vagal activity in healthy subjects as indicated by high HFP and reduced LHR.

KEY WORDS: Ice Water; Heart Rate Variability; Blood Pressure; Vagal Modulation

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