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**Original article:**

**Effect of haemoglobin concentration on cardiovascular system by heart rate variability modulations**

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# **Abstract:**

**Introduction**: Decreased Heart rate variability (HRV) is associated with increased cardiac risk in several conditions. Previous studies show decreased heart rate variability among subject with low haemoglobin concentration. However the underlying pathology of anaemia may be the direct cause of low HRV which may preclude from drawing the conclusion that anaemia per se cause decreased HRV.

**Aims**: - To study the relationship between HRV and haemoglobin concentration on cardiac autonomic modulation in HRV.

**Settings and Design**: The study includes 50 apparently healthy paramedical students of age 18 to 25. They were divided into two groups I (Hb>12gm %) and II (Hb<12gm %).It was a case control study.

**Methods and Material:** Haemoglobin estimation: Colorimetric method was used for estimation of Haemoglobin. HRV Analysis: RMS Polyrite D polygraph version 3.0.11 was used for HRV recording and analysis.

**Statistical analysis used**: Results were expressed as means + S.D. using an SPSS package version 10.0.

**Results:** The mean haemoglobin concentration of group I (mean +SD= 14.03+1.69) was significantly higher compared with mean haemoglobin of group II M+SD=10.28+1.12). There is no statistically significant relation found between haemoglobin concentration and HRV in mild to moderate anaemia. (For all HRV parameters P value > .05).

**Key-words:** Anaemia, Autonomic nervous system, Heart rate variability, Haemoglobin