



Role of Blood Biochemical Components on Cardiac Parameters for Shock Patients

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Abstract

Generally, many blood components such as red blood cells (RBC), white blood cells (WBC), blood plasma volume (BPV), hemoglobin (HG), hematocrit (HCT), cholesterol, platelets, etc. may have an active role in atherosclerosis. In clinical practice, complete blood count (CBC) is easily available but its practical utility as a potential risk factor for cardiac disease is uncertain. A simple measure of RBC size heterogeneity is red blood cell distribution width (RDW), and the increased RDW value is correlated with atrial fibrillation (AF), peripheral artery disease (PAD), acute myocardial infarction (AMI), hypertension, stroke and heart failure (HF). Decreased hemoglobin level (HGL) is frequently associated with chronic heart failure (CHF), as HGL may affect the cardiovascular system (CVS) through blood viscosity and oxygen supply. A low BPV is associated with shock, dehydration, and Addison's disease, while a high BPV is associated with liver and spleen disease, vitamin C deficiency.

Most of the earlier studies have examined the association of only one blood component with some cardiac disease. It is little known the association of many blood components together on any cardiac parameter such as blood pressure (BP) (systolic BP [SBP], basal BP [BBP], diastolic BP [DBP], maximum BP [MBP], mean arterial pressure [MAP], mean central venous pressure [MCVP]), heart rate (HR) (basal HR [BHR], peak HR [PHR], maximum HR [MHR]), ejection fraction (EF), cardiac index (CI) etc. It is stated above that low HGL, low RDW, low and high BPV have many effects on CVS and many diseases. Necessarily, the following queries arise.

Biography

Rabindra Nath Das is a Professor in the Department of Statistics, The University of Burdwan, Burdwan, West Bengal, India. He holds Ph. D., in Statistics, from Burdwan University and Post-Doc from Seoul National University, Seoul, Korea. He has authored about 85 research articles, and along with a research Monograph entitled- Robust Response Surfaces, Regression, and Positive Data Analyses, published from CRC Press, Taylor & Francis, Chapman & Hall. He wrote research articles on Design of experiments, Regression Analysis, Demography, Quality Engineering, Civil Engineering, Epidemiology, Medical sciences, Environmental, Natural sciences etc.



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