



## **Relationship of Phase II Cardiac Rehabilitation Program with Red Blood Cell Distribution Width Level in Post Coronary Artery Bypass Grafting Patients**

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**Abstract : Background:** Coronary heart disease is a chronic inflammation that is influenced by various factors. Increased levels of Red Blood Cell Distribution Width (RDW) are associated with an increase in cardiovascular mortality. Cardiac rehabilitation acts as an anti-inflammatory and improves risk factors. This study aims to assess the relationship of phase II cardiac rehabilitation programs with RDW levels in patients after Coronary Artery Bypass Graft (CABG).

**Methods:** This is a cohort study conducted from October 2018 to November 2018 with the study subjects is post-CABG patients undergoing phase II cardiac rehabilitation programs. RDW levels were examined in two measurement periods, before and after the cardiac rehabilitation program. The study observed changes in various parameters and analyzed the relationship between cardiac rehabilitation programs with RDW levels.

**Result:** We found changes on various parameter such as body weight, body mass index, six minute walking distance, functional capacity, RDW levels, glycated haemoglobin (HbA1c) levels, and Erythrocyte Sedimentation Rate (ESR) which was better and statistically significant with  $p < 0.001$ . There was a strong negative correlation between RDW levels and functional capacity before ( $r -0.932$ ;  $p < 0.001$ ) and after the cardiac rehabilitation program ( $r -0.961$ ;  $p < 0.001$ ).

**Conclusion:** The phase II cardiac rehabilitation programs improving the RDW levels. Not only the RDW levels, but also other parameters such as HbA1c, ESR levels and functional capacity of patients after CABG. There is a negative correlation between the RDW levels and functional capacity both before and after the phase II cardiac rehabilitation program.

**Keywords :** cardiac rehabilitation, RDW, CABG.

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