

## Abnormal Heart Rate Recovery and Duke Treadmill Score as Predictor of Cardiovascular Mortality

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### Abstract

**Background:** The Duke Treadmill Score (DTS) has been well validated and widely used for many years as a powerful prognostic marker in patients being evaluated for coronary artery disease. Slow heart rate recovery (HRR) after exercise as predictor of cardiovascular mortality has been established. Correlation between abnormal HRR and DTS to predict cardiovascular mortality is still uncertain.

**Objective:** The aim of this study was to determine correlation between abnormal HRR and DTS as predictor cardiovascular mortality.

**Methods:** This cross-sectional study included 440 patients (63.2% of men) from treadmill record of Dr Saiful Anwar Hospital in periode December 1<sup>st</sup> 2016 until May 30<sup>th</sup> 2017, population age was 30 to 74 (mean 55) years. The value for HRR was defined as the decrease in heart rate from peak exercise to one minute after the exercise ceased. Twelve beats per minute was defined as the lowest normal value for HRR Chi Square analysis was performed to determine correlation between abnormal HRR and DTS as mortality predictor. EPI INFO software (CDC) was used for data storage and analysis.

**Results:** Patients who had abnormal HRR and low risk DTS was 66, abnormal HRR and moderate risk DTS was 85, abnormal HRR and high risk DTS was 11. There was strong correlation between abnormal HRR with high and moderate risk DTS compared to low risk DTS (respectively OR 2.7333 p=0.0254; OR 2.0506; p=0.0003). No significant correlation between abnormal HRR with moderate risk DTS compared to high risk DTS (p=0.1875).

**Conclusions:** Abnormal HRR with moderate and high risk DTS are strong predictor of cardiovascular mortality.

**Keywords:** Abnormal heart rate recovery; Duke treadmill score; Cardiovascular mortality