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**Relationship between functional capacity, haemodynamic response to exercise and quality of life in chronic heart failure**

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**Background/Aim:** Heart failure is associated with high mortality rate. Diminished functional capacity, haemodynamic response to exercise and quality of life are strong independent determinants of prognosis and mortality in chronic heart failure. The aim of the present study was to assess the relationship between functional capacity, haemodynamic response to exercise and quality of life in patients with chronic heart failure.

**Methods:** A single-centre, prospective, cross-sectional study recruited 42 patients (31 males, 11 females, age 60±10 years, body mass index 29±4 kg/m\(^2\)) with stable chronic heart failure due to left ventricular systolic dysfunction (LVEF=25±7%) and the New York Heart Association Functional Class II (45%) and III (55% of patients). All patients completed a maximal graded cardiopulmonary exercise stress testing using cycle ergometer with non-invasive gas exchange and haemodynamic measurements to assess peak oxygen consumption and cardiac response to exercise. Cardiac power output, expressed in watts, was calculated as the product of mean arterial blood pressure and cardiac output. Quality of life was assessed using Minnesota Living with Heart Failure Questionnaire (MLHF).

**Results:** The average value (±SD) for functional capacity i.e. peak O2 consumption was 14.3±4.3 ml/kg/min, peak exercise haemodynamics i.e. heart rate 105±21 beats/min, mean arterial blood pressure 95±18 mmHg, cardiac output 13.9±3.6 L/min, cardiac power output 2.87±0.83 watts, and MLHF quality of life score 27±18. There was a significant negative relationship between the MLHF quality of life score and peak O2 consumption (r= -0.50, p=0.01) and heart rate (r= -0.30, p=0.05). There was however no significant relationship between the MLHF quality of life score and other exercise haemodynamic measures including peak cardiac power output (r= 0.15, p=0.38), cardiac output (r= 0.22, p=0.15), and mean arterial blood pressure (r= -0.09, p=0.57).

**Conclusion:** The major finding from the present study suggests that functional capacity, represented by peak exercise oxygen consumption, is a strong determinant of quality of life in patients with chronic heart failure. Results further reveal that the MLHF quality of life score may not be influenced by overall function and pumping capability of the heart.