

C70. Pre-surgical Functional Capacity Assessment In Complex Heart Valve Disease Using Peak Oxygen Consumption

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OBJECTIVES: Background: Complex heart valve disease constitutes coexisting mixed and multiple valve pathologies. A paucity of data exists in chronic complex valve disease. A clinical functional capacity assessment of exertional dyspnoea (NYHA class) is central to the decision to operate and predicts prognosis. Peak oxygen consumption (PeakVO₂) is the gold standard of objectively measuring functional aerobic capacity. Objectives: In patients with complex valve disease: 1. To assess functional aerobic capacity using PeakVO₂. 2. To compare the differences between NYHA class I with NYHA class II in to body composition, echocardiographic severity and functional capacity.

METHODS: The study evaluated 45 patients with complex valve disease referred for the timing of surgery. The control group consisted of 15 healthy subjects. All patients underwent a clinical assessment (to determine NYHA functional class), echocardiography and cardiopulmonary testing (peakVO₂).

RESULTS: Results. Patients with complex valve disease achieved significantly lower peak oxygen consumption values than the control group (16 ± 5.9 vs. 31.4 ± 5.9 ml/kg/min; $p = 0.0001$). PeakVO₂ (percentage predicted) was significantly different between the asymptomatic NYHA Class I ($70.9 \pm 20\%$) and the symptomatic NYHA class II ($55.1 \pm 21\%$; $p = 0.003$) with overlap between classes. There was no significant difference in the echocardiographic severity of the valve lesions between the NYHA classes . PeakVO₂ did not correlate with the ejection fraction or diastolic dysfunction.

CONCLUSIONS: Patients with complex valve disease show significant functional capacity impairment, which may be difficult to detect from their clinical presentation. This requires PeakVO₂ to objectively distinguish the NYHA clinical functional class.