

**Prognostic Factors in Pulmonary Hypertension: The Obesity Paradox**

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Background: Prognostic assessment in patients with pulmonary hypertension is important for clinical evaluation and therapeutical decision making.

Methods: A total of 105 consecutive patients with a diagnosis of pulmonary hypertension were evaluated by clinical characteristics, echocardiographic and right heart catheterization parameters. We assessed prognostic factors during a mean follow-up period of 19±13 months, by univariate and multivariate regression analysis for mortality.

Results: During follow-up period, 30 patients (29%) died. Death was associated in univariate analysis with higher pulmonary artery and right atrial pressures, enlarged right ventricular size and reduced function, preserved LV systolic function by echo, higher trans-pulmonary gradient and pulmonary vascular resistance, and inverse relation with body mass index (BMI). Lower cardiac output, elevated capillary wedge pressures and clinical heart failure, were not associated with higher mortality rates during follow-up. In multivariate analysis, obesity (BMI≥30kg/m<sup>2</sup>), was the only variable independently and significantly correlated with improved survival [H.R 0.2, 95% C.I 0.1-0.5; p=0.001], even after adjustment for baseline characteristics or heart failure measures. Obese (BMI≥30kg/m<sup>2</sup>) and very-obese (BMI≥35kg/m<sup>2</sup>) patients had significantly less mortality rates (15% and 8%, respectively) than normal/over-weight patients (35% and 40%, respectively) during follow-up (p=0.02).

Conclusions: In a cohort of pulmonary hypertension patients, obesity was significantly associated with lower mortality in multivariate analysis, compared to normal and over-weight patients. Similar to previous observations in other cardiovascular states, there may be an "obesity paradox" in patients with pulmonary hypertension, necessitating further research in larger cohorts of patients.

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