DOES OBESITY AFFECT BRAIN NATRIURETIC PEPTIDE LEVELS IN PATIENTS WITH PULMONARY ARTERIAL HYPERTENSION?

ACC Oral Contributions
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Background: Brain natriuretic peptide (BNP) is a prognostic marker in pulmonary arterial hypertension (PAH). Obesity has been shown to affect BNP levels in patients with left heart failure. This has not been studied in PAH.

Methods: We reviewed our pulmonary hypertension database for PAH patients followed at our center between 5/03-12/06 who had available echocardiographic (TTE), BNP, and body mass index (BMI) data (N=83). Patients were grouped by BMI: obese (BMI≥30, N=35) and non-obese (BMI<30, N=48). BNP and death/transplant outcomes were compared between BMI groups.

Results: Median survival was 2.7 ± 2.4 yrs. There were 45 deaths and 4 lung transplants. Obese patients had lower median BNP (interquartile range): 182 (64, 459) vs 373 (89,810) pg/ml, p=0.015. Diabetes mellitus was more frequent in obese patients (p = 0.01) but other comorbidities were not. Age, sex, % idiopathic PAH, PAH medications, WHO functional class (WHO FC), hemodynamics, TTE parameters, and creatinine were similar. Multivariable regression analysis showed significant association of BNP and BMI independent of age, hypertension, diabetes, WHO FC, hemodynamics, or creatinine (p=0.016). BNP was associated with death/transplant and was predictive of 2-year outcomes only in non-obese patients (p=0.001, figure).

Conclusion: BNP tends to be lower and less predictive of death/transplant outcomes in obese PAH patients after adjusting for disease severity. The risk prediction value of BNP in PAH subpopulations merits further analysis.

Figure: Receiver operating characteristic curves for brain natriuretic peptide

![ROC Curve](image)