AVERAGE FIRST-YEAR BNP PREDICTS POOR OUTCOME AFTER HEART TRANSPLANTATION

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Elevated single BNP measurements after cardiac transplantation have been reported to predict cardiac rejection. The physiology behind elevated BNP may be due to volume overload, restrictive cardiac physiology, or rejection. It is not known what is the significance of persistently elevated BNP levels in the first year after heart transplantation. METHODS: We reviewed 107 heart transplant patients between July 2001 and November 2003 who had 2348 BNP blood samples obtained from time of transplant. A mean first-year BNP level was obtained by averaging at least 4 blood samples (2 blood samples before and after the 6 month post-transplant period). Samples during allograft rejection, hemodialysis, and during the first two months (during which levels are known to be elevated) were excluded. The patients were divided into two groups: “Low BNP” (n=75, those with first-year mean BNP less than 140 ng/ml) and "High BNP" (n=32, those with first-year mean BNP greater than 140 ng/ml). RESULTS: Compared to the Low-BNP group, patients with high BNP had a significantly greater incidence of cardiac allograft vasculopathy (4% vs 22%), any hemodynamic compromising rejection (4 % vs 31%) and mortality (1.4 % vs 12%)(all comparisons p<0.05) over an average follow-up of 28 months. There was no difference in mean echocardiographic ejection fraction between the two groups (LVEF 54.6% vs. 52.2%, p=0.08).

CONCLUSION: Persistently elevated BNP in the first year after heart transplant appears to be an early marker for poor outcome. Further studies into the management and actual cause of persistently elevated BNP following cardiac transplantation need to be performed.