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Our Experience with Autologous Bone Marrow Stem Cell Application in Dilated Cardiomyopathy

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Background:
Use of autologous bone marrow stem cell is a newly evolving treatment modality for end stage cardiac failure as reported in the literature. We report our experience with two patients with dilated cardiomyopathy who underwent this treatment after failure of maximal conventional therapy.

Methods:
A 29 year old Male patient with history of orthopnea and PND, with a diagnosis of dilated cardiomyopathy and echocardiographic evidence of severe LV dysfunction was referred for further treatment. His echo on admission showed EF of 17% and no other abnormal findings except elevated bilirubin levels. He was in NYHA functional class IV. He received intracoronary injection of autologous bone marrow stem cells in January 2009. 254X10⁶ cells were injected with a CD34+ of 0.20%. His clinical condition stabilized and he was discharged home. He received a second injection of 22X10⁶ in vitro expanded stem cells with a CD34+ of 0.72% in Aug 2009. He is now in NYHA class II-III with EF 24%.

A 31 year old Male patient with history of increasing shortness of breath, severe over the past 3-4 days was admitted for evaluation and treatment. His echo on admission showed EF of 20% and was in NYHA functional class IV. Coronary angiogram was normal and he was stabilized on maximal anti failure measures. He received intracoronary autologous bone marrow stem cell injection of 56X10⁶ with a CD34+ of 0.53% in August 2009. His clinical condition stabilized over the next 10 days and he was discharged home.

Conclusions:
In our experience of two cases of dilated cardiomyopathy, safety of intracoronary injection of autologous bone marrow stem cells both isolated and in vitro expanded has been proven in both the cases with efficacy proven in one of the cases. Long term follow-
up of these two cases and inclusion of more number of similar cases where all available conventional therapies have not resulted in significant improvement for such studies are planned.