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# FIVE YEARS MORTALITY REVIEW ON 15 CONSECUTIVE PATIENTS WITH END-STAGE CARDIOMYOPATHY AND INTRACORONARY MESENCHYMAL STROMAL CELLS INFUSION

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**Background:** Symptomatic end-stage dilated cardiomyopathy with reduced function is associated with a high mortality estimated at 25 to 50 percent per year. Mesenchymal stromal cell (MSC) have the potential to improve cardiomyopathy through resolution of scar tissues, cardiomyogenesis and/or angiogenesis. We have previously reported improvement in echocardiographic parameters at 12 months after intracoronary injection for patients with no-options ischemic cardiomyopathy. Now we present the 5-year follow-up results of 15 patients with end-stage cardiomyopathy of ischemic (n¼9) and non-ischemic (n¼6) aetiology.

**Methods:** Fifteen patients with symptomatic heart failure and echocardiographic findings of left ventricular end-diastolic diameter (LVIDD) of 55 mm of more and left ventricular ejection fraction (LVEF) of 35% or less were recruited. All patients were deemed by at least two cardiologists to have no other options including revascularization or cardiac resynchronization therapy. MSC was obtained from bone marrow of the patients and expanded ex vivo according to published protocol. About 2±106 MSC/kg body weight were injected through the lumen of an over-the-wire balloon during catheterization. Echocardiographic parameters including LVIDD, LVEF and interventricular septal wall thickness in diastole (IVSD) were obtained at baseline, 6 months, and 6 monthly thereafter.

**Results:** There were no immediate complications and no deaths in the first 12 months. At the end of 5 years, 4 patients with (2 ischemic, 2 non-ischemic) had died of (1 myocardial infarction, 3 progressive heart failure). One patient with non-ischemic cardiomyopathy required a permanent pacemaker for complete heart block. All 11 survivors improved symptomatically indicated by New York Heart Association (NYHA) classification. Mean LVIDD, LVEF and IVSD also improved.

**Conclusions:** MSC intracoronary infusion for patients with end-stage dilated cardiomyopathy appears to be associated with symptomatic and echocardiographic improvement, and lower mortality when compared to epidemiological data. These results need to be validated in larger randomized trials.