

# Stem Cell Therapy for Cardiovascular Disorders - Our Clinical Experience

Jayakrishnan AG<sup>1,2</sup>, Madhusankar N<sup>3</sup>, Rao YY<sup>4</sup>, Manjunath S<sup>5</sup>, Dedeepiya V<sup>5</sup>, Abraham S<sup>5,6</sup>

## Abstract

### Background:

Autologous Bone Marrow stem Cell transplantation is a viable therapeutic option for patients with end stage heart failure due to cardiomyopathy of varied etiology as there are only limited treatment options other than cardiac transplantation.

The rationale behind the application of stem cells in these patients include

- Stem cells directly replace the affected cells by differentiation into the damaged cell type
- Stem cells also exert Paracrine effects by secretion of growth factors (VGEF,FGF-1)to stimulate local cell growth
- In addition to the above, stem cells release signaling factors which recruit stem cells from elsewhere by modulating the immune system.

### Materials & Methods:

In this presentation we describe our study on a series of 13

patients who received isolated and expanded CD 34 cells from the bone marrow. Seven had ischemic dysfunction, three had dilated cardiomyopathy and three had primary pulmonary hypertension. Five patients received the stem cells via intracoronary injection, three directly into the myocardium and three intrapulmonary.

### Results:

All patients showed functional improvement of the myocardium recorded by non-invasive investigations and improvement in the quality of life. Follow up period ranged from 6 months to 2 years.

### Conclusion:

Our experience with bone marrow derived stem cells in patients with cardiomyopathy has been encouraging. More studies are planned in the future.

*\*Former affiliation, when the study was done*