



# Is Time to Repeat and Study with Fetal Stem Cells in Heart Failure Patients

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## Editorial

Thirty-eight (38) studies met the inclusion criteria for this review, including a total of 1907 randomized participants (1114 bone marrow-derived stem/progenitor cells and 793 controls) who were assessed for the primary outcomes of the study. Sixteen independent trials are new to this review update [1]. We found low-quality evidence that cell therapy is associated with a reduced risk of mortality over long-term follow-up, although more evidence is required before this finding can be considered robust. The number of studies reporting morbidity outcomes was generally low. There was evidence that cell therapy reduces the risk of non-fatal MI and arrhythmias during long-term follow-up, but meta-analyses were underpowered due to the number of included studies (and participants), as well as the low number of observed events. Composite measures of mortality and morbidity are infrequently reported, despite the increased statistical power obtained from such measures. We detected no differences between different cell types, doses, or routes of administration [1]. In a more recent meta-analysis provided the cumulative efficacy and safety results of stem cell transplantation in advanced heart failure based on recent RCTs. The results suggest that stem cell therapy was associated with a moderate improvement in LVEF, and the safety analysis indicates no increased risk of mortality in patients with advanced heart failure [2]. None of this patients received Fetal Stem Cells and in none of this patients was possible to demonstrated grow of new cardiac cells a total reverse remodeling of the left ventricle. We perform the only Surgical Trial with Fetal Stem Cells (HFDSCs) in Heart Failure Patients [3].

Patients from HFDSCs who provided 40 months of follow-up data demonstrated improvements both clinically and in imaging studies with respect to imaging. Patients improved in association with increased contractility in these regions. In 4 of the patients in this group left ventricular contraction returned to normality assessed by echocardiography at 90 days. Compared with the baseline evaluations, we observed other improvements: The mean ( $\pm$  SD) studies, a greater wall thickness was observed, both eccentric equivalents, 2.45 to 5.63 ( $P < 0.0001$ ); the mean LVEDD decreased 15%, from 6.85  $\pm$  0.6 cm to 5.80  $\pm$  0.58 cm ( $P < 0.001$ ); the mean performance on the 6-min walk test increased 43.2%, from 251  $\pm$  113.1 sec to 360  $\pm$  0 sec ( $P = 0.01$ ); the mean distance increased 64.4%, from 284.4  $\pm$  144.9 m to 468.2  $\pm$  89.8 m ( $P = 0.004$ ); and the mean score in the Minnesota congestive and concentric. NYHA class decreased from 3.4  $\pm$  0.5 to 1.33  $\pm$  0.5 ( $P = 0.001$ ); mean EF increased 31%, from 26.6%  $\pm$  4.0% to 34.8%  $\pm$  7.2% ( $p = 0.005$ ); the ETT yield increased 291.3%, from 4.25 min to 16.63 min (128.9% in metabolic HF test decreased from 71  $\pm$  27.3 to 6  $\pm$  5.9 ( $p < 0.001$ ). The probability of Kaplan-Maier survival at 40 months was 66%. No rejection was observed in these patients nor did malignancy develop nodules or cancer at follow-up. At 4 years, follow-up was discontinued with 66% survival (K-M). With the evidences we have today in the heart failure patients treated with different stem cells is time to repeat and study with fetal stem cells in heart failure patients.

## References

1. Fisher SA, Doree C, Taggart DP, Mathur A, Martin-Rendon E. Cell therapy for heart disease: Trial sequential analyses of two Cochrane reviews. *Clin Pharmacol Ther.* 2016;100(1):88-101.
2. Jayaraj JS, Janapala RN, Qaseem A, Usman N, Fathima N, Kashif T, et al. Efficacy and safety of stem cell therapy in advance heart failure patients: A systematic review with a meta-analysis of recent trials between 2017 and 2019. *Cureus.* 2019;11(9):e5585.
3. Benetti F, Peñaherrera E, Maldonado T, Vera YD, Subramanian V, Geffner L. Direct myocardial implantation of human fetal stem cells in heart failure patients: Long-term results. *Heart Surg Forum.* 2010;13(1):E31-5.

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Received Date: 21 Feb 2020

Accepted Date: 10 Mar 2020

Published Date: 16 Mar 2020

### Citation:

Benetti FJ, Scialacomo N. Is Time to Repeat and Study with Fetal Stem Cells in Heart Failure Patients. *Clin Surg.* 2020; 5: 2769.

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