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## Randomized clinical study showed ejection fraction improvement and cardiac muscle mass increasing analyzed with magnetic resonance imaging after a year of bone marrow stem cells transplantation

Idiberto Jose Zotarelli Filho<sup>1, 2, 3</sup>

<sup>1</sup>State University of Sao Paulo, Brazil

<sup>2</sup>Beneficencia Portuguesa Hospital, Brazil

<sup>3</sup>Fama-Medicine School, Brazil

The idiopathic dilated cardiomyopathy (IDC) is one of the major public health problems in the western world with high mortality. Stem cell therapy has emerged as a potential therapeutic option for cell death related heart diseases and several positive effects were assigned to cell therapy in cardiomyopathy with 16,000 transplants of autologous stem cell and 29000 allogeneic. In Brazil, the transplantation of autologous bone marrow-stem cells increased by about the 1000 per year. The aim of this study with 32 patients was identify short term result of cell transplantation in idiopathic dilated cardiomyopathy patients (IDC) who were treated by transplantation of autologous bone marrow mononuclear cells (BMMC). Intracoronary injections of autologous BMMC were performed in sixteen patients with severe ventricle dysfunction (mean of left ventricle ejection fraction-LVEF=21.03%), cardiac mass muscle around 157.2 g and NYHA between III and IV grades, other 16 IDC patients received placebo. The IDCs were followed up for one and two years by magnetic resonance imaging (MRI). The results after one year showed significant improvement in LVEF (mean=184.4) and muscle mass increasing, after two years the LVEF continued improving, reaching a mean of 38.69% and the cardiac muscle mass kept stable (mean=180.5 g). Except for one patient, all the other had improvement in the NYHA functional class. The placebo group did not show any improvement. We believe that BMMC implant may be a beneficial therapeutic option for IDC patients.

### Biography

Idiberto Jose Zotarelli Filho is currently working in UNESP University in the field of Regenerative Medicine and Tissue Engineering with Stem Cells. He is working as Researcher in the Mitosis (Portuguese Beneficent Hospital, São José do Rio Preto/SP, Brazil) and Researcher in the FAMA (school medicine, Mineiros/GO, Brazil). He has published several articles and he is an author of 2 books. He is also actively participates in Research Coaching Program, Durham, Duke University, USA under the auspices of the Brazilian Cardiology Society and he is a Member of the Research Ethics Committee.

[m.zotarelli@gmail.com](mailto:m.zotarelli@gmail.com)

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