

PRESS RELEASE

Stem cells from bone marrow save legs from amputation in diabetics

Vijaya hospital vascular surgeons & NCRM achieve this novel breakthrough

Limb salvaged patients have excellent quality of life; published in Cytotherapy

Chennai 16 Jun 2011. Leg ulcers due to poor blood supply in diabetic patients are a common problem in India, considered as diabetic capital of the world. Vijaya Hospital vascular surgeons jointly with Nichi-In Centre for Regenerative Medicine (NCRM) have achieved a major breakthrough using stem cells from the patient's own bone marrow, with which cured the leg ulcers and made the patients walk on their own feet. This study on patients with severe uncontrolled diabetes has been published in an International journal "Cytotherapy"*.

Diabetes affects the peripheral blood vessels due to which the blood supply compromised portions of the leg develop ulcers and infection and that may necessitate an amputation of the leg leading to incapacitation of the patient. Stem cells are considered to be having enormous potentials in medicine including capability to restore the blood supply to the disease affected portions by their angiogenic capacity as published in the literature. Especially the stem cells taken from one's own bone marrow are considered to be safe without any ethical issues and these stem cells have been used in this study in six patients who were suffering from severe debilitating ulcers in their legs due to diabetes. These patients were initially advised to have their legs cut off to avoid spread of infection and septicemia affecting the rest of the body. We took them for an autologous bone marrow stem cell application as a challenge and there was no need for amputation as the stem cells from their own bone marrow have helped the diseased portion rejuvenate with more blood supply and improve their quality of life said Dr S.R Subrammanniyan, Chief vascular surgeon of Vijaya Hospital, the first author of the publication.

This accomplishment on patients with diabetes, he said could be the **first in India**, because for other kinds of diseases such as TAO such treatments have been done and not for diabetes affected legs. The wounds of our patients were significantly larger than what has been reported till date in the literature.

In this treatment, the patient's bone marrow which is the hollow portion in the hip bone was pricked and stem cells were taken. They were processed as per cGMP protocols at NCRM and injected at multiple sites at the affected portion after an angiogram. Within a week after the injection, healing was observed and healthy granulation started covering the

ulcer gradually. In two patients a skin grafting was necessary. The process of isolation of the stem cells is very important as each ones stem cell concentration will vary. Moreover when injected intramuscularly, the viability of the cells after injection and their function depends upon the processing, as with age stem cells decrease in number. We followed a custom tailored methodology and made the stem cell concentrate optimal for each injection instead of making an “one size-fits all” kind of common protocol and that is what we hope has made the difference said Dr Abraham, Director NCRM.

Incidence of Diabetes in India is very rapidly increasing and we are likely to have more number of such patients. When there is no feasibility of a revascularization by bypass surgery or interventional procedures, and when amputation is the only option left, with our experience, we would say that the autologous bone marrow stem cell therapy should be considered and an early application of this option is highly recommended said Dr. Amalorpavanathan, one of the investigators.

***Abstract of the publication is available online at:**

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