

Joint event on

**2<sup>ND</sup> ANNUAL CONGRESS ON DIABETES AND ITS COMPLICATIONS &  
8<sup>TH</sup> ANNUAL CONGRESS ON PROBIOTICS, FUNCTIONAL FOODS & NUTRACEUTICALS**

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**Stem cells led management for diabetic foot**

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**A**s a major cause of leg amputation in the United States, diabetic foot has been a quite challenging problem for physicians, surgeons, scientists, patients and the society. Diabetic foot is a complicated pathogenesis progress with nerve vessels, local pressure, inflammation and infections involved. Local debridement and tissue regenerative are quite essential for better outcome. The local necrotic tissues, infections, inflammation and other insults block the growth of the vessels and tissues and thus prevent the wound healing. By thorough debridement, these insults were removed and the new environment comes into being, which offers fresh, better oxygenated and relatively healthier setting that promotes the growth of new tissues and vessels. As a growing promise, stem cells have been used for tissue and vessel regeneration after the debridement. From the origin, there are Mesenchymal Derived Stem Cells (MDSC) and Adipocytes Derived Stem Cells (ADMS). It can be autologous or endogenous. Endogenous stem cells and tissue-engineered implant can be applied with immuno-suppression with scalable tech using bi construct transplantation. Exosome from stem cells culture media is found rich in MALAT1 that is essential for wound healing. Local injection of Neural Growth Factor (NGF), TPO, soluble stem cell recruitment factors (SDF-1), inflammation-modulators, progenitors, Nitrate Oxide (NO), Hypoxia Inducible Factor (HIF-1a) can promote the growth of vessels, angiogenesis and the regeneration of the tissues. Local light energy can also be used for better outcome. Each has pros and cons. Most of the work is still at the stage of animal models and experimental cells. With better and more delicate work done, not only it will benefit diabetic foot, but wound care and regeneration of any kind.

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