

[P07] AUTOLOGOUS MESENCHYMAL STEM CELLS IN TREATMENT OF RECALCITRANT NEUROPATHIC DIABETIC FOOT ULCER: RANDOMIZED CONTROLLED TRIAL

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Aim: study the effect of locally injected autologous bone marrow mesenchymal stem cells (BM MSCs) on ulcer healing in patients with resistant neuropathic diabetic foot ulcers.

Method: Twenty patients with resistant neuropathic diabetic foot ulcers were randomly assigned to conventional treatment and proper offloading modalities alone or with added MSCs injection. Aspiration of 40cc of Patients' own bone marrow under good aseptic technique. MSCs were characterized by adherence and trans differentiation. Cultured cells were subjected to microbiological and karyotyping testing. Cultured BM MSCs were injected in the edges of the wound at eight points in day 0 and day 7. Total injected cell number ranged from one million to 2 million cells. Cases were followed for 12 weeks for size of ulcer and any local reactions

Results/Discussion: In the group of MSCs ulcer size decreased by median 49.9%(9.09%,86.6%) after 6 weeks and reached median 68.24% (3.03%-100%) after 12 weeks while the conventionally treated group ulcer size reduction was median 7.67% (-30%-35%) and median 5.27% (-133.33%- 25%) respectively (**P value < 0.0001**). Complete healing was achieved in one case in MSCs group. There were no systemic complications or local reactions to the stem cell therapy.

Conclusion: Local injection of autologous bone marrow derived mesenchymal stem cell is promising in healing of recalcitrant neuropathic diabetic foot ulcers. The procedure is safe and well tolerated by the patients. Optimum number of injected cells and frequency of injection is still to be determined.