

New Therapeutical Approach in the Treatment of Severe Radiation Burn: Surgery and Local Stem Cell Therapy

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The therapeutical management of severe radiation burns remains today a challenging issue. The conventional surgical treatment (excision and skin autograft or flap) often fails to prevent unpredictable and un-controlled extension of the radiation necrotic process. We report here our second experience of therapeutic management of a radiation accident victim combining surgery and cellular therapy using autologous Mesenchymal Stem Cells (MSC). The patient presented a very severe arm radiation burn which was treated by several surgical times: iterative excisions, skin graft, latissimus muscle dorsi flap and forearm radial flap). Local autologous MSC were administrated as an adjuvant to improve the surgical approach. The clinical evolution (radiation pain and healing progression) was favourable and no recurrence of radiation inflammatory waves was observed during the eight month patient's follow-up suggesting that MSC act as "cell drug" in modulating radiation inflammatory processes. These results open new prospects in the medical management of severe radiation burns.