

Evaluation of efficacy of stem cell conditioned media in excision wound healing in male Wistar rats

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Introduction: With the skin's constant ability to shed old cells and create new ones, cuts, wounds and surgical incisions are repaired. However, this process also results in scars of all shapes and sizes. Stem cells serve as a potent tool in the field of regenerative medicine. These cells release chemo-cytokines and growth factors and promote angiogenesis, inflammation, wound contraction and remodelling. Conditioned media is used for stem cells contain cytokines and growth factors. However there no report of this conditioned media on wound healing. Hence we planned a study.

Materials and Methods: Three groups- control, standard and test comprising of six animals each were used for the study. Control group was left untreated. Standard group was treated with povidone iodine ointment once daily. Test group was treated twice daily with lyophilised powder of stem cell conditioned media in combination with the standard drug. The study was conducted for 21 days. Period of epithelialization was measured for all the three groups. Wound contraction rate was specifically measured on 4th, 8th, 12th and 16th day of the study.

Results: The result of the present study showed that stem cell conditioned media in a lyophilised form along with the standard drug showed a statistically significant increase in wound contraction rate compared to control group ($p < 0.05$). However, there is no significant difference in the period of epithelialisation in comparison to the control group.

Conclusion: Based on the results, it is concluded that stem cell conditioned media is effective in the process of wound healing. However, further research indicating the use of conditioned media as a healing tool along with the histological analysis of the wound area will definitely provide a clear insight on the process of healing

Biography

Bairy Laxmianarayna K is currently Director in the department of Manipal Centre of Clinical Research, Manipal University and Professor and Head of Pharmacology Kasturba Medical College, Manipal, Karnataka India. After acquiring his MBBS degree from Medical College Bellary, he did his MD (Pharmacology) from Kasturba Medical College Manipal and joined as faculty in the same department in the year 1985. He earned his PhD in Pharmacology in the year 1991. He has guided 10 MD postgraduates' students and ten candidates for their doctoral program. He has delivered several invited talks at various National Conferences. Dr. Bairy has published about 130 research articles in various National and International peer reviewed journals. He is the recipient of Practitioner's gold medal for standing first in Physiology in the Karnataka University Examination held in December, 1976 and Dr.T. M. A. Pai Gold medal for excellence in Medical Research for the year 1987 in Kasturba Medical College, India

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