

A STUDY ON THE ROLE OF EPIDERMAL GROWTH FACTOR IN DIABETIC ULCER MANAGEMENT

General Surgery

Dr. R. Rani Suganya

Assistant Professor, Dept. Of General Surgery, Govt. Stanley Medical College, Chennai.

Dr. M. Annapoorani*

Assistant Professor, Govt. Kilpauk Medical College, Chennai. *Corresponding Author

Dr. C. Naveen Kumar

Post Graduate, Dept. Of General Surgery, Govt. Stanley Medical College, Chennai.

ABSTRACT

Diabetes mellitus is a disease of large magnitude with 25 million people affected by the disease in India. One of the common complications of this disease is Diabetic foot disease characterised by non-healing ulcers over the foot predominantly. This study is aimed at evaluating the efficacy and tolerability of Recombinant Epidermal Growth Factor treatment in increasing the rate of healing of ulcers and decreasing the duration of ulcer healing among patients with diabetic foot disease thereby improving the quality of life, preventing further morbidity and mortality and shortening hospital stay.

KEYWORDS

Diabetic foot, Epidermal growth factor, Wound healing

INTRODUCTION:

One of the most common problem for which the diabetics are hospitalized is the diabetic foot disease. The life-time risk of developing foot ulceration in the diabetics is 25% and it precedes 84% of all the lower limb amputations. The increase in the rate of amputations and mortality in Diabetics is due to failure of wound healing process and also due to macrovascular and microvascular complications.

Hence treatment of Diabetic ulcers is important in reducing the rate of lower limb amputations. Chronic diabetic ulcers were previously treated with debridement, antibiotic or antiseptic ointment and with dressings. Newer treatment modalities include application of Growth Factors, Bioengineered skin substitutes, Negative pressure wound therapy, Gene transfer, Stem cell treatment. This study is about the use of Growth Factors in treatment of Diabetic foot ulcers.

OBJECTIVES:

The aim of this study is to evaluate the efficacy of Epidermal Growth Factor in Diabetic ulcer management.

METHODS:

This is a randomized interventional, prospective comparative study done during the period from February 2012 to August 2013. It is conducted among patients who presented with diabetic foot ulcers in the OPD, The Department of General surgery.

INCLUSION CRITERIA:

- Age 20-70 years
- Patients with grade 2 Diabetic ulcer
- Palpable peripheral pulses or doppler showing flow in peripheral vessels.
- Patients with diabetes and other controlled co-morbidities.

EXCLUSION CRITERIA:

- Patients with extensive gangrenous changes
- Patients with vascular occlusion
- Pregnant or breast-feeding women
- Patients with uncontrolled Diabetes and/or other uncontrolled co-morbidities.

60 diabetic patients with ulcers who are meeting the inclusion criteria are randomly divided into 2 groups. One group is treated with Epidermal Growth Factor and the other group is treated routinely with antiseptic solution and the results are compared.

OBSERVATION AND RESULTS:

The patients were followed up for a period of 15 weeks. Rate of healing in EGF group was 86.67%, and in the control group the rate of healing

was 66.67%. The average duration of healing in patients with diabetes alone is approximately 7 weeks in EGF treated patients and approximately 9 weeks in the control group. The average duration of healing in patients with diabetes and other comorbidities is approximately 8.5 weeks in EGF treated patients and approximately 10 weeks in the control group. Overall, in the EGF group the duration of healing was approximately 8 weeks as compared to 9 weeks in the control group.

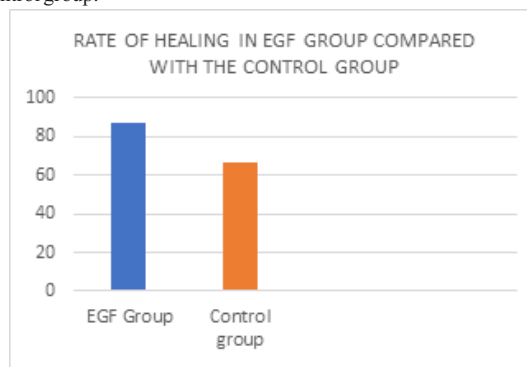


Chart 1: Rate of healing in EGF group compared with the control group.

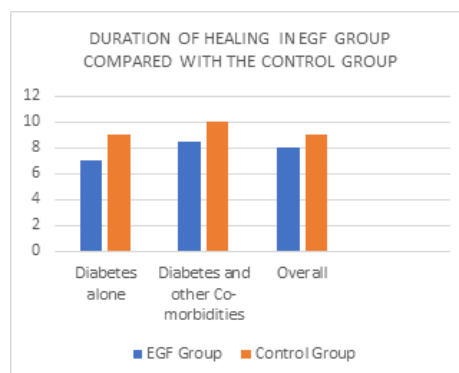


Chart 2: Duration of healing in EGF group compared with the control group.

CONCLUSION:

The topical application of Epidermal Growth Factor results in higher healing rate and significantly shorter duration of healing in patients with diabetes alone and a marginally shorter duration of healing in

patients with diabetes associated with co-morbidities like hypertension, Ischaemic heart disease, anaemia, chronic renal failure. No adverse reactions are encountered and it is tolerated well by all patients.

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