

Clinical Evaluation of Effect of Dressing with Placental Extract (Inj Placentrex) in the Treatment of Infected Wounds

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Summary

Infected wounds arising as a sequelae after different operation and bed sores of eclamptic mother were treated with local application of placental extract (Inj Placentrex); control of equal numbers were treated with povidone iodine and hydrogen peroxide.

The placental extract in the form of Inj Placentrex was found to be very much effective, inexpensive and excellent stimulant of granulation tissue, moreover superior to the dressing of povidone iodine.

It promotes healing, acts as immunomodulant and has tissue regeneration activity. It produced dramatic improvement of healing of bed sores.

Introduction

Wound infection and wound dehiscence are a common finding after emergency and elective operations in an institution facing the problem of patient overload.

Many conservative and operative ways are suggested to combat infection as well as to enhance wound healing. Over the ages human placenta has been used as a biological dressing to treat various ailments including ulcers. Leprosy workers had tried placenta dressing in chronic leprosy ulcer, (Subramaniam et al, 1977). Experiments with animal system for the use of placenta as a biological dressing on wound has been reported earlier, (Bohn, 1979). A number of placental specific protein and some of their functions were studied by others in detail (Rappaport et al 1970, Klopper 1980).

Material and Method

The clinical evaluation of the effect of dressing with placental extract in the form of Inj Placentrex was studied during a period of two years in the Dept. of Ob-

Gyn in collaboration with Microbiology and Surgery Departments of this Institution. Infected wounds following emergency LSCS, emergency laparotomy, elective operation and bedsore of eclamptic mothers were the subjects of the study group and had their dressing with only local application of Inj Placentrex. An equal number of patients having infected wounds had their dressing with hydrogen peroxide and povidone iodine; these served as control; antibiotics were given according to sensitivity.

The following factors were taken into consideration; area of wound, presence of slough, any sero-purulent discharge, culture and sensitivity of the discharge, granulation tissue formation and requirement of secondary suturing. Diabetes, severe anaemia with Hb < 6 gm% & Jaundice were excluded from our study and the controls.

Result

The age of patients ranged from 18-48 yrs. The size of infected wounds ranged from 20 sq. cm to 60 sq.

cm and organisms grown were species of E.coli, Staphylococcus, Pseudomonas; after 3-4 days of dressing with Inj Placentrex the wound became clean and swab taken from the wound for culture showed no pathogenic organisms. Granulation tissue was seen to form well and the infection was controlled after 4-8 days.

Table-I. depicts the number of infected wounds after different operations and of bed sores. Group A wounds had dressing with only Inj Placentrex application locally while group B wounds had dressing with hydrogen peroxide and povidone iodine.

Table - I
Various type of infected wounds in trial and control group.

| Type of Wound Group | Trial Group | Control Group |
|-----------------------------|-------------|---------------|
| Emergency LSCS | 20 | 20 |
| Emergency laparotomy | 10 | 10 |
| Elective abd hysterectomy | 8 | 8 |
| Bedsore of eclamptic mother | 9 | 9 |

Table-II illustrates the average length of time interval for healing; culture negativity, granulation tissue formation and requirement of secondary suturing in both groups.

Table-III, shows the effect of local dressing on bed sores. Nine bed sores of eclamptic mothers in each group had local dressing with Inj placentrex and Povidone iodine, hydrogen peroxide, if required.

Discussion

In this study it was observed that dressing with Inj Placentrex appears to free the lesion from infection and enhances adequate granulation tissue formation thereby promoting healing. This treatment was found to be very effective and inexpensive compared to other chemotherapeutic agents (Subramanian and Sathyavan, 1977, Goldfarb et al, 1980) and offer several advantages over many antibiotics in respect of antibacterial activity, vascularisation of wound and healing as shown by Robson and Krizek (1973), Bennett et al (1980), Burleson and Riseman (1973). This dressing is devoid of side-effects.

Subramaniam et al(1990) observed the effect of placental dressing in indolent ulcer, which was highly encouraging. They demonstrated that

Table - II
Healing of infected wound in trial and Control group

| Type of Wound | Average area of wound in sq. cm. (approx) | Positive culture before dressing | Positive culture after 4 days of dressing | Average days of dressing | Formation of granulation tissue | Cocombitant use of antibiotics | Requirement of secondary suture / skin graft |
|---------------|---|----------------------------------|---|--------------------------|---------------------------------|--------------------------------|--|
| Trial Group | Em LSCS n=20 | 15 | 2 | 4-5 | Good | 2 | 4 |
| | Em Lap n=10 | 8 | 1 | 5 | Good | 2 | 1 |
| | El abd Hysterectomy n=8 | 2 | Nil | 5 | Good | Nil | Nil |
| | Bed Sores n=9 | 7 | 2 | 15-20 | Good | 2 | 1 |
| Control Group | Em LSCS n=20 | 16 | 10 | 7 | Average | 10 | 11 |
| | Em Lap n=10 | 4 | 2 | 3 | Good | 2 | 1 |
| | El abd Hysterectomy n=8 | 6 | 5 | 21-30 | Poor | 5 | 4 |
| | Bed Sores n=9 | | | | | | |

Table – III
Healing of bed sores in trial and control group

| | Type of Wound | Area of Wound in Sq. cm | Days of Dressing | Requirement of Skin Graft |
|---------------|-----------------|----------------------------|------------------|------------------------------|
| Trial Group | Type – 1 n=5 | 30-50 | 12-15 | Nil |
| | Type – 2 n=4 | 52-70 | 20-22 | 1 |
| Control Group | Type – 1 n=5 | 30-50 | 16-22 | 1 |
| | Type – 2 n=4 | 52-70 | 26-32 | 3 |

IgG and IgM levels increased markedly with placental dressing thereby enhancing the humoral immune system.

Placental extract contains biologically active substances such as vitamins, hormones, polypeptide enzymes (Bandivedkar et al, 1981), (Carotti and Allegra 1981). The extract is also rich in DNA & RNA (Bianchini et al, 1981). The nucleotides are known for their tissue regeneration effect through the unique process of protein synthesis; (Lehninger, 1984).

It is now well established that placental extract can be used as biological stimulant in surgery. It may be interesting to study the effect of the drug on collagen and mucopolysaccharide levels of the tissue. Further studies involving histochemical assessment of the wound healing process will substantiate the effect of placental extract.

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