SUMMARY

Improvement in infusion therapy in burn has led to reduction in mortality due to acute shock. But management of burn wound sepsis is still a very challenging problem in terms of morbidity and mortality, in spite of vast advances in medical sciences and availability of various broad spectrum antibiotics.

Many treatment modalities have been advocated by various workers from time to time so far, but all have their own advantages and disadvantages. Of course, autogenous skin grafting after early excision of burn wound is the best covering material amongst all suggested till now. But it has its own limitations in terms of limited availability, unfitness of already shocked patients for surgical procedure involved in skin grafting and subgraft suppuration.

Fortunately enough more comprehensive knowledge is now available about the pathophysiological changes that accompany the major thermal injury. The avascular nature of burn tissue as a result of thrombosis of vessels, wound maceration and necrosis limit the delivery of systemically administered antibiotics and favour
microbials proliferation which provides the local source of virulent organism leading to frank septicaemia and death.

Thus, it is necessary that treatment of local infection be given priority and since systemic delivery is sub-optimal, more reliance is to be put on local method of control of infection. Because of the inadequacy of presently used local application we needed to re-examine a new combination of locally applied chemotherapeutics/antibiotics.

The topical agent should be antiseptic, non-antigenic, non-toxic systemically or locally and local analgesic effect is also desirable. It should minimize the vaporizational heat loss and of course should be of low cost.

The present work was undertaken and designed to compare the efficacy of topical PVP + Neosporin and Amniotic membrane and at the same time to assess the supremacy of either of them. A total of 114 patients were kept in this study. Out of which, 53 were male patients and 61 were females. Most of the patients belong to younger age group.

Out of 114 patients, three groups of patients were made, namely 47 patients with superficial burns in
Ist group, 20 patients with deep burns in IIInd group and 47 patients with mixed burns (both superficial & deep burns) in IIIrd group. Each group was sub-divided into two sub-groups. One sub-group was treated with PVP + Neosporin and another by application of Amniotic membrane.

Application of both dressings was done after prior cleaning by 1% Savlon and sterile saline. The first sub-group of patients treated with sprinkling of Neosporin powder to form a uniform layer with 1% available iodine which was sprayed uniformly, thus completely soaking the powder. A further layer of powder was applied to form a crust. On first day, three applications were carried out without removing previously applied layers. On second day the applications were reduced to two and from third day onwards this application was limited to those area from which the crust was either separated or cracked. In patients with deep burns, apart from application of PVP + Neosporin, injection of 0.25% iodine in subescharal plane at multiple sites were given on third post-burn day and repeated twice weekly until escharolysis was completed. Second sub-group of patients treated with application of Amniotic membrane and no dressing was applied because wound remained closed.
There was minimum incidence of infection in PVP + Neosporin treated patients as shown by culture and wound biopsies reports as compared to Amniotic membrane treated patients. There was higher incidence of submembrane suppuration as compared to patients treated with PVP + Neosporin.

As for rate of healing, most of the superficial burn patients, when treated with PVP + N showed complete healing within 15 days while amniotic membrane sub-group, majority healed within 30 days, a substantial number of wound took 45 days to heal. Deep burn patients treated with PVP + N required 45 days for complete healing and few wound took more than 45 days, while Amniotic membrane treated patients showed complete healing within 45 days (percentage of burn was less in this sub-group as compared to PVP + N treated sub-group). Sub-group of mixed burn patients treated with PVP + N showed complete healing within 45 days. Few patients required more than 60 days as their percentage of burn was varies from 40-60%.

Patients of this group treated with Amniotic membrane took 45 days for complete healing while substantial number of patients required more than 60 days. At the same time, the subescharal injections of PVP in deep burn patients showed a distinct reduced septicaemia and local infection rates, early escharolysis followed by early graft take-up and subsequent healing.
Comparing the two dressings, it was concluded that -

1. Both the dressings are easily available and easy to apply.

2. There was no significant allergic reaction noticed with both types of dressing.

3. The healing is faster in Povidone iodine with Neosporin powder treated patients than Amniotic membrane treated patients.

4. Incidence of infection is more in Amniotic membrane treated patients than PVP + Neosporin powder treated patients.

Povidone iodine + Neosporin powder gave better results than Amniotic membrane application.