MATERIAL AND METHODS
The present study was concluded at M.L.B. Medical College Hospital, Chalri, from 2.2.1990 to 1.2.1991, to evaluate the effects of simple cleaning of burn wounds with sterile saline solution and Povidone-iodine plus Neosporin powder dressings and to compare the results obtained by these two methods.

Sterile saline solution: was used to clean the wounds daily. 0.9% sodium chloride coming in wards for intravenous infusion was used.

Neosporin Powder: is available in powder form, 10 gm packs. This contains the following ingredients:

1) Polymyxin-B-sulfate: 5000 U B.P. per gm.
2) Zinc Bacitracin: 4000 U B.P. per gm.
3) Neomycin sulfate: 3400 U B.P. per gm.

Betadine lotion: This is available in 10% Povidone-iodine form. One container of Betadine lotion contains 100 ml.

Selection of cases:

All the cases with superficial and deep burns upto 60% of body surface area who were admitted to the
Emergency ward of the hospital within 7 days of the thermal injury were included in this study irrespective of their age, sex, socio-economic status, contamination of wound and mode of injury.

**Method of study:**

All the cases were subjected to detailed interrogation to elicit the history and then thorough general and local examination. These were recorded on a standard proforma sheet prepared for this study which is attached.

**History:**

- Name, age, sex, occupation, rural/urban, date of admission and discharge and time of healing.

Regarding the burn accident:

- Date and time of burn (duration of burn)
- Place of accident and nature of work at the time of accident,
- Cause of the burn,
- Prior treatment received (if any),
- Symptoms.

**Physical examination:**

**General:** The cases were examined to see for pulse, blood pressure, temperature, respiration and hydration and for general condition as a whole.
Local Examination: Burn wounds were elaborated in terms of percentage of burn, depth of burn and contamination.

a) Percentage of burn was calculated by Wallace's 'Rule of Nine' in cases of adults and Lund & Browder chart in cases of children.

b) Depth of burn (superficial/deep) - a hypodermic needle was used to test the burn sensation. If the area had increased sensitivity, it was taken as superficial or partial thickness burn. The area of diminished or absent pain sensitivity was taken as deep or full thickness burn. If the hair could be pulled out easily and painlessly from the burn area, it was taken as a III degree, and if not, as a II degree burn.

c) Contamination of burn wound: The burn areas were graded for contamination as follows -

i) Apparently clean: No contamination of foreign body, clean intact blisters.

ii) Mild contamination: Slight contamination, ruptured blisters, open wounds.

iii) Gross contamination: Heavy contamination with dirty cloth, foreign body and/or medical substances i.e. cow-dung, mud etc.
d) Area involved: Diagrammatic representation in anterior, posterior and lateral views was done as shown in the attached proforma.

In addition, the help of the following criteria was also sought:

<table>
<thead>
<tr>
<th>Classification of depth</th>
<th>Appearance of burn area</th>
<th>Pain sensation</th>
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<tbody>
<tr>
<td>1 degree</td>
<td>Erythematosous</td>
<td>Painful and hypeesthetic.</td>
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<tr>
<td>II degree A</td>
<td>Blisters with reddened base and moisture</td>
<td>Painful and hypeesthetic.</td>
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<tr>
<td>II degree B</td>
<td>Blisters with blanched base and moisture</td>
<td>Painful, hypeesthetic or anaesthetic or anaesthetic at places.</td>
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<tr>
<td>III degree</td>
<td>Leathery pale or pearly white or charred dry</td>
<td>Painless and anaesthetic.</td>
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</table>

Resuscitation and general management:

Prior to starting local management, patients were resuscitated and general treatment was made available to every patient (viz. intravenous infusion, blood and plasma infusion, analgesics, antibiotics and tetanus prophylaxis). A swab was taken from the burn surface for culture and sensitivity testing.
Local management of the wound:

Patients were divided into two groups -

**Group A**: Only simple cleaning was done daily. The burn areas were gently debrided, necrosed skin and blisters were removed. The burn areas were then cleaned with 0.5% sodium. This was followed by thorough washing with sterile saline (0.9% sodium chloride) solution. Spirit was applied over the adjacent skin and margins of the burn area. This process was repeated as and when required.

**Group B**: Neosporin powder was sprinkled over the burn area till a uniform coating was obtained. Then betadine lotion was applied in drops over this till a thick yellow crust was formed over the burn areas. In deep wounds, Betadine was injected by hypodermic needle in subescharotic spaces.

**Assessment of the results**: This was done by interview with patients, examination - general and local, and investigations.

**Interview**: The patient was asked about -

1. Pain and discomfort (mild, moderate or severe),
2. Fever,
3. Any evidence of allergy as itching, rashes, nausea or vomiting.
Physical examination:

General: Case was seen for pulse, blood pressure, temperature, respiration, hydration and general condition.

Local: The following were observed:

1. Presence of discharge and soakage.

2. Appearance of burn area in terms of healing and tendency to heal.

3. Collection of pus, if any. In case when present culture and sensitivity was done.

4. Epithelialisation of the wound.

5. Total duration of healing.

Investigations:

1. Routine: Blood - complete hemogram, TLC, DLC, Hb gm%, E.S.R.

Urine - Gross (Albumin, sugar) and microscopic.

2. Culture and sensitivity testing for pus if present.
M.R.D. No.
Name
Occupation
Address

Age/Sex
Rural/Urban
Date and time of admission
Date and time of discharge
Total time of healing

HISTORY

1) Date and time of burn
2) Place of work and nature of work at the time of burn
3) Cause of burn
4) Prior treatment (if any)

SYMPTOMS

1) Pain
2) Burning
3) Blisters
4) Fever
5) Oliguria
6) Discharge from wound surface
7) Difficulty in swallowing or in inspiration
8) Any other

PHYSICAL EXAMINATION

a) General examination at time of admission
   - O.C.
   - Pulse
   - B.P.
   - Temperature
   - Hydration
b) Local examination -
- Percentage of burn
- Depth of burn
- Degree of burn
- Contamination
- Appearance of new area
- Area involved (Diagnosis)

Anterior | Posterior | Lateral

Progressive Report:

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<td>Days</td>
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- Pain
- Soakage
- Mobility
- Biodressing Changes:
  (a) Surface
  (b) Margins
  (c) Thickness
  (d) Lusture
  (e) Colour
  (f) Dryness
  (g) Adherence

Healed on

Time in healing
Photograph - 1

Showing Materials used in the work.
(0.9% Saline available in the Ward
for I/V infusion was also used).