Acknowledgements

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Agency for Clinical Innovation

NSW Health describes the Agency for Clinical Innovation (ACI) in the following way: “ACI is a board-governed statutory health corporation that reports to the NSW Minister for Health and the Director-General of NSW Health. Established by the NSW Government in direct response to the Garling Inquiry into Acute Care Services in NSW Public Hospitals, the ACI is building on the work of the Greater Metropolitan Clinical Taskforce (GMCT), and engaging doctors, nurses, allied health professionals, managers and the wider community in the process of researching, designing and delivering evidence-based improvements to the way specific treatments and services are provided within the NSW public health system. As one of the "pillars of reform" identified by the former Commissioner Peter Garling SC, the ACI works closely with the Bureau for Health Information, Clinical Excellence Commission, the Clinical Education and Training Institute and the Cancer Institute NSW [1].

Abbreviations

<table>
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<th>Abbreviation</th>
<th>Definition</th>
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<tr>
<td>ACI</td>
<td>Agency for Clinical Innovation</td>
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<td>SBIS</td>
<td>ACI Statewide Burn Injury Service</td>
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<tr>
<td>ANZBA</td>
<td>Australian and New Zealand Burn Association</td>
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<tr>
<td>EMSB</td>
<td>Emergency Management of Severe Burns course</td>
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<td>ED</td>
<td>Emergency Department</td>
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<tr>
<td>TBSA</td>
<td>Total Body Surface Area</td>
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<td>IV</td>
<td>Intravenous</td>
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<td>IM</td>
<td>Intramuscular</td>
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<td>IDC</td>
<td>In-Dwelling Catheter</td>
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<td>C spine</td>
<td>Cervical spine</td>
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<td>MBA</td>
<td>Motorbike Accident</td>
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<td>IPL</td>
<td>Intense Pulse Light</td>
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<td>LPG</td>
<td>Liquid Petroleum Gas</td>
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<td>LDI</td>
<td>Laser Doppler Imaging</td>
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**AGENCY FOR CLINICAL INNOVATION**

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1. Introduction

1.1 Purpose

This document provides a summary of the available evidence to support the Clinical Practice Guidelines: Burn Patient Management and the Minor Burn Management booklet developed by the ACI Statewide Burn Injury Service (SBIS).

2. Burn Injury Definitions

A burn injury is defined as “.. any injury to tissues of the body caused by hot liquids, flames, contact with hot objects, electricity, chemicals, radiation or friction from a fast moving object.”[2]. The injuries sustained are generally classified as:

- Chemical – direct contact with chemicals (acid or alkali)
- Contact – direct contact with hot objects
- Electrical – direct contact with an electrical current
- Flame – direct contact with open flame or fire
- Flash – exposure to the energy produced by explosive material
- Friction – rapid movement of a surface against the skin eg treadmill, MBA, etc
- Radiation – exposure to solar energy, radiotherapy, laser or IPL
- Radiant Heat – heat radiating from heaters, open fire places, etc
- Reverse Thermal – contact with liquid or solid of extreme cold ie LPG
- Scald – hot liquids such as hot water and steam, hot fats, oils and foods
3. Anatomy and Physiology of the Skin

The skin, also referred to as the Integumentary System, is the largest organ of the body, with a surface area of 1-2 square metres[2-4]. It is also the heaviest organ of the body; average adults have 4-7 kg of skin[4].

3.1 Functions of the skin[5]:

- Temperature regulation
- Sensory interface
- Immune response
- Protection from bacterial invasion
- Control of fluid loss
- Metabolic function
- Psycho-social function

3.2 Structure of the Skin

Skin structure consists of several layers, the epidermis and dermis, beneath which is the subcutaneous fat layer[2, 6-9].


3.2.1 Epidermis

The epidermis is the first barrier for protection of foreign substance invasion. Keratinocytes are the principle cells of the epidermis, gradually migrating to the surface and sloughed off in desquamation[2, 4]. In the epidermis keratin is flexible, but is thicker, stiffer and harder in the finger and toe nails. Hair is also made up of keratin.
The epidermis is comprised of four to five layers[2, 4, 8, 10]
   - stratum corneum
   - stratum lucidium (generally not seen in thin epidermis)
   - stratum granulosum
   - stratum spinosum
   - stratum germinativum (also known as stratum basale)
Skin pigment melanocytes are contained in the basale layer. Epidermal cells mature and progress from the lower level of the basale, flattening and losing their nuclei, to be eventually shed from the corneum layer[2, 8].

3.2.2 Dermis

The dermis controls thermoregulation and supports the vascular network. Hair follicles, nerve fibres, sweat glands and nails are located in the dermis layer and protrude through the epidermis[11]. The dermis contains mostly fibroblasts which secrete collagen and elastin. Immune cells are also present and defend against foreign substances that have come through the epidermis.

The dermis consists of two layers[2, 8]
   - papillary dermis
   - reticular layer

The papillary dermis is a thinner upper layer containing loosely ordered collagen fibres. The reticular dermis is the thicker lower layer of the dermis. It contains more densely packed collagen fibres[8].

3.2.3 Other Structures and functions

The subcutaneous fat cells insulate the body against the cold. When the body overheats the small blood vessels carry warm blood near the surface for cooling[6].

Skin thickness depends on a number of variables including age and gender. The location on the body is also important as eyelids have very thin layers of skin whereas the sole of the foot is very thick – up to 1mm[4, 10, 11].

Alterations to the skin can affect the overall wellbeing of the individual. This is especially evident when the epidermal layer is lost leading to such issues as fluid loss and susceptibility to infection[4].
4 Pathophysiology of Burn Injuries: Local and Systemic

4.1 Injury Zones of the Burn Wound[12]

Burn injuries consist of three zones of damage: the zone of coagulation, the zone of stasis and the zone of hyperaemia. These zones were first described by Jackson in 1953 and have been referred to in many articles[5, 11-16].

1. The zone of coagulation, or necrosis, is the central area of a burn injury where there is the greatest amount of damage. Necrosis in this zone is irreversible[13, 15]. First aid measures do not alter the extent of injury in this area.

2. The zone of stasis, also referred to as the zone of ischaemia or damage, lies outside the zone of coagulation. Adequate first aid measures can have a beneficial effect on this zone. Changes in this zone can continue to progress up to two weeks following injury[13]. Changes in this central zone can have a significant influence on the assessment of body surface area and depth of burn wounds[13, 15, 17-19].

3. The outer layer is the zone of hyperaemia, or survival. In burns greater than 20% TBSA the whole body becomes the zone of hyperaemia. Cells in this zone do not generally suffer from any long term effects, usually resolving after seven to ten days[3, 20].
4.2 Management of the Burn Wound - First Aid

First aid following a burn injury is an important facet of patient care[21-24]. The main aims for first aid are to stop the burning process and cool the wound[5, 25]. The Australian and New Zealand Burn Association (ANZBA) recommend effective burn first aid as 20 minutes cool running water within 3 hours following injury[5, 21-23, 26-28]. Effective first aid can have a positive effect on the progression of the wound, particularly in decreasing inflammation and oedema[21, 22, 28].

The application of timely and effective first aid measures such as cold running water for 20 minutes given within the first three hours after injury can have a beneficial effect on the zone of stasis by stopping the burning process and assisting in cell survival[21, 22, 29] (see Diagram 2). It can also have a beneficial analgesic outcome for the patient[21, 22, 25, 27]. Conversely the lack of effective first aid can lead to an increased chance of further tissue necrosis as the zone of stasis can progress to coagulation[28].

- There have been several porcine studies which evaluate different first aid modalities[21, 22, 26-28]. The porcine studies are used as pig skin is similar to human skin and can thus produce a comparable reaction [27, 29].

- One of these studies evaluated the effective time frame for cool running water[27]. The study compared cooling a burn with cool running water for 5, 10, 20 and 30 minutes by use of intradermal temperatures and histological examinations. Results indicated that 20 minutes cool running water is optimal first aid following a burn injury[27].

- Ideal water temperature for cooling is 15°C[22, 24], range 8°C to 25°C. In a porcine study by Cuttle et al[22] it was discovered that water at 15°C is optimal. Ice should not be used as it causes vasoconstriction and hypothermia [5, 23]. Ice can also cause burning when placed directly against the skin.

- Wet towels / pads and sprayed water are not efficient at cooling the burn as they do not cool the wound adequately[28]. They should not be used unless there is no water readily available i.e. in transit to medical care.

- Duration of running water should be 20 minutes unless other factors prevent this (e.g. large burn causing rapid heat loss, hypothermia, and multiple...
traumas). It is important to keep the remaining areas dry and warm to avoid hypothermia[23]. Hypothermia can increase morbidity and mortality in burn patients [3, 29]. If patient’s body temperature falls below 35°C - stop cooling.
4.3 Emergency Assessment and Management of Severe Burns – Fluid Management[5]

- Hypovolaemia is a common problem for burn injured patients due to the increased vascular permeability [3, 5, 30-36].
- Fluid resuscitation using the Parkland Formula is recommended by burn units worldwide [30, 37-41]. This formula was originally described by Baxter in 1968 and is used to compensate for the loss of circulating volume following a burn injury [41, 42]. The Australian and New Zealand Burn Association recommend a slightly modified version of this original formula[5]. It recommends:
  - 3-4mls x weight (kg) x %TBSA[5]

  The calculated amount of fluid is divided in two. Half is given in the first 8hrs from the time of injury. The other half is given in the following 16hrs, making up the first 24hrs [5, 37, 41, 43].

- The calculated amount of fluid (according to the Parkland Formula) is used as a guide. Close monitoring is necessary as ongoing fluid resuscitation should be titrated against urine output [32, 38, 40-44]. The urine output should be maintained at a rate of 0.5ml / kg / hr for adults and 1 ml / kg / hr for children [45-49].

- The type of fluid has been widely debated, particularly crystalloid vs colloid [30, 48, 50-52]. There has also recently been discussion regarding the usage of hypertonic solution [30, 51]. In NSW Hartman’s (a crystalloid) solution is recommended as this is readily available in most settings and useful at replacing the large fluid loss[5].

- Care must be taken not to under or over resuscitate patients as this may lead to secondary complications such as oliguria, renal failure, pulmonary oedema, increased peripheral oedema, abdominal compartment syndrome and raised intraocular pressure [30, 35, 41, 44, 53, 54].

- Some patients may need more fluid than expected such as those with electrical burns, multi-trauma, inhalation injuries, very large %TBSA and those with delayed resuscitation [41, 44].
4.4 Surface Area Assessment

The assessment of burn extent is expressed as a percentage (%) of the Total Body Surface Area (TBSA) [55]. Inaccurate calculation of %TBSA can have significant affect on accurate calculation of fluid resuscitation [41, 56]. In most cases the burn size is over estimated in regards to TBSA and the patients receive more fluid than is necessary (with subsequent effects of excess oedema)(see section 4.3).

To assess this extent of TBSA there are a number of methods which can be utilised. These include the Rule of Nines, Palmar Method and the Lund and Browder chart [3, 9, 55, 57, 58]. Whatever method is used it is important to note that erythema is not included in a TBSA calculation.

4.4.1 Rule of Nines

This method is often used as it is quick and simple [55]. The body is broken into areas allocated 9%, with 1% allocated to the groin, totalling 100% [3, 9, 57, 58]. As children are proportionally different to adults there is the Paediatric Rule of Nines [3, 55]. This method is the same for upper limbs and torso but allocates 18% to the head and 14% to each leg. For every year of life after 12 months take 1% from the head and add ½% to each leg. Once the child is 10 years old the body has the same proportions to an adult and thus uses the adult Rule of Nines [3].

4.4.2 Palmar Method

This method uses the palmar surface of the patient’s palm and fingers to represent 1% of the TBSA. It can be useful for small scattered areas, or to deduct small spared areas from large burns [9, 57, 58].

4.4.3 Lund and Browder Chart

This is often reported to be a more accurate method of assessment of burn extent as it calculates TBSA using more specific areas [55, 57, 58]. However it can be complicated in use and therefore often not as useful as the Rule of Nines for a quick evaluation.
### 4.5 Pain Management

All patients that have a burn experience pain at some stage and this pain can be difficult to manage [59-61]. Optimal pain management for burn pain involves accurate assessment and combines both pharmacological and non-pharmacological methods to achieve minimal pain for the burns patient [59, 60, 62].

It is widely recognised that there are 3 stages of pain for the burn patient with procedural pain or pain at wound dressings having the most effect both physically and psychologically [63-66].

#### 4.5.1 The 3 Stages of Pain Relief[65, 67]

1. **Background**
   a. Pain experienced, when at rest, in burned areas and treatment areas, e.g. donor site.
   b. Constant and dull in nature.
   c. Best treated with constant serum opioid levels, e.g. acute phase, continuous narcotic infusion or slow released oral opioid as pain levels decrease [66, 68].

2. **Breakthrough**
   a. Rapid onset of pain and often short in duration.
   b. Occurs whilst attending to simple activities such as walking or changing position in bed.
   c. Relieved by quick release oral opioids and for patients with IV access, PCA or bolus doses[68].

3. **Procedural Pain**
   a. High levels of intense pain for duration of procedure, e.g. wound dressing changes and therapy.
   b. Requires higher more potent doses of opioid administration.
   c. Can also utilise adjuncts such as diversion/distraction [59-61, 63, 65, 66, 68] (see above).

#### 4.5.2 Non pharmacological:

Non-pharmacological methods are often used effectively to compliment pharmacological relief; these include diversion therapy, massage, and feeding in the young. These methods are used to help with anxiety associated with burn pain and in particular pain at wound dressing change [3, 64, 68].

#### 4.5.3 Special Considerations:

In then acute resuscitation situation, narcotic IM injections should not be administered as peripheral shut down occurs in burns > 10% TBSA. Absorption of the drug will be delayed so pain relief will not be achieved[3]. As circulation improves an overdose of the opiate may occur.
4.6 Initial Assessment of the Burn Wound Depth

Burn depth is dependent on the mechanism of injury and length of exposure to the heat source or agent [4, 55, 58]. In the past depths were expressed in ‘degrees’ as first, second, third and fourth degree. In current practice, the use of anatomical descriptors is preferred when classifying burn depths[57]. Using these anatomical descriptors burns are now classified as epidermal, superficial dermal, mid dermal, deep dermal and full thickness injuries. Even experienced clinicians are often only correct in assessing burn depths in 67% of patients [57, 69, 70]. The usage of a diagnostic tool such as Laser Doppler Imaging (LDI) can provide a more accurate depth assessment [4, 40, 69-74].

4.6.1 Epidermal Burn[2]
- Skin intact, blanch to pressure
- Erythema (not included in % TBSA assessment)
- Heal spontaneously within 3-7 days with moisturiser or protective dressing[9]

4.6.2 Superficial Dermal Burn (Superficial Partial Thickness)[2, 55]
- Damage to upper layer of dermis
- Blisters present or denuded
- Blanch to pressure (under blister)
- Should heal within 7-10 days with minimal dressing requirements

4.6.3 Mid Dermal Burn (Mid Partial Thickness)[2]
- Heterogeneous, variable depths
- Blanches to pressure may have slow capillary return
- Should heal within 14 days
- Deeper areas or over a joint may need surgical intervention and referral

4.6.4 Deep Dermal Burn (Deep Partial Thickness)
- Burn extends into the deeper layers of the dermis but not through the entire dermis[75].
- Poor or absent capillary refill when blanched
- Generally need surgical intervention
- Refer to specialist unit

4.6.5 Full Thickness Burn[2, 55]
- Entire destruction of dermis, sometimes underlying tissue involved.
- Presents as white, waxy, brown, black
- Leathery. Capillary refill absent.
- Surgical intervention and long-term scar management required
- Refer to specialist unit

4.6.6 Wound Appearance
- Aside from the obvious epidermal or full thickness burn, initial determinations of burn depth can be somewhat difficult[4]. The appearance of a burn wound can change over a period of time. Discernable differences in burn depth may not be
apparent until 7-10 days after the burn injury[4]. It is rare that a burn wound will be uniform in depth. Mixed or heterogeneous burn wounds are common[75].
4.7 Nutrition for burn injuries

- Resting energy expenditure can increase by more than 100% of usual resting basal metabolic rate following a large burn injury[76].
- Close attention to nutritional needs both acutely and in the longer term is vital to reduce protein breakdown, prolonged wound healing, immune suppression and the increased risk of infective complications [77, 78].
- Malnutrition has also been shown to impair tissue healing[79] and contribute to an increase in length of hospital stay[80].
- The commencement of early enteral nutrition has been seen to have metabolic and clinical benefits for the burn injured patient[77], as well as assist in preventing gastroparesis and/or ileus[76].
- Consultation with a dietician is essential to guide prescription, implementation and ongoing monitoring of supplemental nutrition.

4.7.1 Delivery of supplemental nutrition

- **Oral** – High energy oral supplements such as ensure plus can be encouraged if able to be tolerated.
- **Enteral** – If a patient cannot meet their nutritional requirements orally, timely supplemental enteral feeding via a nasogastric tube should occur. In the acute phase of management if a base of skull fracture is suspected, an orogastric tube should be passed[81]. Enteral nutrition is the preferred method for patients who are intubated.
- **Parenteral** – In rare cases when the gastro-intestinal tract becomes non functional, feeding via the intravenous route may be necessary.

4.7.2 Precautions

- Overfeeding is a potential risk that may occur when supplemental nutrition takes place. Major complications associated with overfeeding include an increased carbon dioxide production, fatty liver and azotemia (raised nitrogen compounds indicative of renal insufficiency[82]). Careful monitoring of metabolic rate, liver enzymes, fluid intake, urine output and blood chemistry must occur to prevent this[83].
5  Burn Wound

5.1  Cleansing and Debriding the Burn Wound

5.1.1  Cleansing

- Wound cleansing removes devitalised tissue and debris from previous dressings, and excessive exudate, all of which act as a substrate for bacterial multiplication prolonging the inflammatory stage and thus retards wound healing[84].
- Prior to dressing procedure to determine if the wound requires cleaning ensure pain levels are controlled. Explain procedure to the patient. Minimise chemical irritation by using an appropriate cleaning solution such as saline, potable water or chlorhexidine [84-86].
- While carrying out wound cleansing be aware of fragile new cells and reduce pain and trauma to the patient and the wound bed[87].
- Maintain a stable body temperature throughout the procedure especially over prolonged intervals[88, 89].
- Follow standard infection control principles to prevent the transmission of pathogens[90].

5.1.2  Debridement

Healing of the burn injury may require debridement of devitalised tissue to allow spontaneous re-epithelialisation (healing by secondary intention) or by grafting with an autograft (healing by primary intention). The ideal method of debridement should be with analgesia, early, safe, effective, and selective to the tissue type and harmless to non-injured tissue[91, 92].

Wound Debridement is the removal of devitalised tissue, biofilm, particulate matter and foreign bodies that are incompatible with healing [93, 94].

5.1.2.1 Methods of Debridement[95]:

- Autolytic Debridement
  - The use of rehydrating or moisture retention dressings or agents to assist with autolysis of necrotic or devitalised tissue
  - Advantages: Selective debridement, not harmful to granulating or epithelialising tissue. Inexpensive.
  - Disadvantages: Results may be slow. Maceration to the surrounding intact skin. May increase wound exudate. Occlusive dressings are not recommended on infected wounds

- Mechanical Debridement
  - The removal of necrotic/devitalised tissue by mechanical means such as irrigation or pulsation therapy, hydrotherapy
  - Advantages: May soften eschar and devitalised tissue to aid sharp debridement
  - Disadvantages: May be expensive if hydrotherapy, mechanical irrigation system
• **Conservative Sharp Wound Debridement (CSWD)**  
  - Conservative removal of loose, tissue in a wound using sharp sterile scissors  
  - Advantages: CSWD provides a fast and effective method of wound debridement, and can be used when appropriate with other methods of debridement. Inexpensive  
  - Disadvantages: Requires specialised and skilled clinician. Increased pain for the patient. Requires access to sterile, sharp instruments.

• **Surgical Debridement**  
  - A definitive procedure performed by a Medical Practitioner under anaesthetic and aseptic conditions, in a designated treatment facility using sterile sharp instrument including Braithwaite Knife™, dermatone or Versajet™.  
  - Advantages: Maximises debridement with asepsis when performed in sterile working environment (i.e. Operating Theatre). Appropriate when burns are deep and extensive  
  - Disadvantages: Often results in loss of some viable tissue surrounding excised eschar, and excess blood loss[96]. Potential associated risks of a general anaesthetic for the patient. Potential for increased pain for the patient post operative.

5.1.2.1 Other clinical indications for wound debridement are:

- Wound bed preparation prior to application of a temporary skin substitutes (eg Biobrane™), biosynthetic or synthetic dressings that require minimal dressing change and provide a moist wound environment [97, 98].
- The presence of necrotic, devitalised, biofilms or infected tissue that is inhibiting healing[84, 97, 99].

5.1.2.2 Wound debridement is cautioned for some patients[95].

Check with the medical team when patients have

- Diabetes
- Peripheral vascular disease
- Immunosupression
- Thrombocytopenia
- Risk of bleeding due to impaired clotting disorders

5.1.3 **Exudate Management**[85]

- Burn wound exudate is dependant on a number of factors present in the burn wound at various stages of healing[4].
- Ongoing exudate management varies depending on the stage of wound healing, the depth of burn, and the wound management plan. The aim of exudate management is to create an optimal moist wound environment to promote burn wound healing[84, 100].
- There are several phases of burn wound exudate. Initially, exudate provides moisture that is essential for wound healing and wound re-modelling. Ongoing wound exudate is responsible for removing damaged cells (metabolites) from the wound interface. Prolonged unmanaged exudate can extend the inflammatory period and delayed wound healing[4].
In the first 24hrs, exudate from the wound will be high due to capillary leakage, inflammation and large molecule transport across the interstitium[4].

Management of exudate is based on a balance between maceration and desiccation[4, 100].

Wound product selection to manage exudate should have qualities of absorption, leakage prevention, maceration reduction at the wound interface, and have the ability to hold exudate under compression[87, 100].

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**Flowchart displaying Exudate management[85]**

- **Effective Exudate Management**
  - Managing exudate to be beneficial to the patient and the wound
  - **Enhance patient quality of life**
    - Ensure psychosocial support
    - Enhance nutrition
    - Provide education
    - Optimize cooperation with all aspects of general and wound-related treatment
  - **Optimise wound bed**
    - Debridement — remove necrotic tissue and slough
    - Manage infection as per local protocol (e.g., topical antimicrobials, systemic antibiotics)
  - **Treat contributory or underlying factors**
    - Specialist referral may be required
  - **Prevent and treat exudate-related problems**
    - Leakage and soiling
    - Periwound skin changes
    - Discomfort/pain
    - Odour
    - Infection
    - Delayed wound healing
    - Protein loss/fluid and electrolyte imbalance
    - Delayed autolysis
    - Dressing adherence
    - Psychosocial effects
  - **Remove/maintain/increase moisture**
    - Dressings
    - Topical negative pressure
    - Fluid collection devices, e.g., osmotic products

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5.1.4 Special Considerations for Wound Management

- For burns to the scalp and excessively hairy areas the area should be shaved
- Infection issues:
  - Burn wounds are an excellent medium for bacterial contamination, colonisation and localised infection which may spread, resulting in systemic infection[101].
  - Prophylactic antibiotics are not routinely given to burn patients as they do not reduce the risk of infection. Antibiotics are only given to patients with known infections and are prescribed to sensitivities. Consultation with Infectious Diseases is strongly recommended.
  - In the initial post-burn stage the patient may experience febrile periods. These do not necessarily indicate infection, although they should be monitored. Febrile episodes are often related to the release of large amounts of pyrogens resulting from the initial injury[85].
5.2 Management of Blisters

Blisters are observed in superficial dermal, mid to deep dermal thickness burns and may or may not require intervention/treatment. Blisters are a result of inflammatory changes that increase capillary permeability allowing oedema formation between the epidermis and the dermis [98].

If blisters are present in the burn wound decisions whether to debride, not to debride or to incise to drain the fluid must be considered. There is no universal standard among burn clinicians to debride or not to debride blisters. Arguments for preserving the blister is that it creates its own biological protection thus leaving it will reduce the risk of infection and cause less pain. The arguments in favour of debridement or aspiration of blister fluid focus on the components of the fluid being detrimental to healing and that there is an infection risk with leaving the devitalised blister roof on. Some practitioners prefer to debride blisters that are broken, fragile, are on flexor surfaces or incise the blister due to the fluid causing pressure and pain [55, 98].

5.2.2 Types of Blister Management:

5.2.2.1 Blisters remain intact:
- If blister is small and will not rupture
- If a wound dressing can be applied that will not cause excessive pressure and will not adhere to the blister
- If analgesia inadequate

6.2.1.1 Incise blister, drain fluid and keep the blister roof on if:
- Pressure from fluid in blister is causing pain
- The dermis requires depth assessment
- Blister is reducing range of motion or is on flexor surfaces
- Blister is likely to rupture
- A moist wound healing environment/dressing can be provided

6.2.1.2 Debride blister:
- If a moist wound healing environment (e.g. skin substitute or synthetic dressing) can be provided that requires minimal changing.
- If adequate analgesia can be provided before, during and after the procedure.

6.2.1 Optimise patient comfort, safety and privacy by
- Providing adequate pain relief before, during and after debridement (procedural pain relief, back ground pain relief)
- Obtaining consent
- Providing patient education

6.2.2 Use infection control strategies to
- Maintain asepsis and universal precautions, safely dispose of sharps and wastes [98, 102].
5.3 Digital Photograph of the Burn Wound

Digital photography is now used throughout the NSW SBIS for gaining information about the burn wound sustained to help recognise the need for transfer, admission or just consultation. Digital photography helps to enhance communication between the burns team and the referral centre and allows for more effective communication [69, 103].

- The patient should be given adequate explanation of the procedure and sign a consent prior to any photographs being taken [104-106].
- Take numerous pictures, with and without flash if necessary, extras can be deleted when downloading [105, 107, 108].
- It is possible to email digital photographs of burn wound to burn units. Contact must be made between referring and accepting medical/nursing staff. Photographs must be taken in accordance with above guidelines and must be accompanied by injury history and consent [104, 105, 109].
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