

Treatment of two large sacral pressure ulcers with IODOFLEX[◇], a cadexomer dressing with iodine

Introduction

There is a fine balance between environmental flora and skin flora and this balance maintains equilibrium, until there is a break in the human protective layer the skin. The flora then 'spills' into the wound and colonisation occurs. Critical colonisation has been described as "The point at which the host defences are unable to maintain the balance of organisms at colonisation" (Hampton and Collins 2003). This paper presents the treatment of two patients with colonised pressure ulcers with an antibacterial dressing (IODOFLEX).

Aims

The immediate aim included reducing bacterial loading and slough in order to prepare the wound bed for healing. The long term aim was to heal the wounds in as short a time as possible to reduce potential for clinical infection.

Background

Bacteria are some of the most abundant life forms on earth. Each bacterium is a single cell without nucleus and contains a single DNA chromosome carrying between 1000 and 5000 genes. Bacteria can reproduce every 20 minutes and, under some conditions, can produce millions of new cells every day; they can also mutate (Hampton 1998). A wound bed will present with a slimy covering consisting of bacteria and dozens of cells. This slimy coating allows the bacteria to bury itself where it is partially protected from phagocytes, lymphocytes, antibodies and (most importantly) antibiotics.

Patients with pressure sores are 49% likely to also have bacteraemia with mortality rates likely to be 55% (Bryan, *et al*, 1983). Sugarman *et al*. (1983) found that 9 out of 28 patients with a non-healing pressure sore had osteomyelitis as a contributing factor. Therefore, it is important to understand when a wound is clinically infected and requires antibiotic therapy and when a wound is colonised and can be treated with antibacterial dressings.

Definitions

Infected wounds are caused by micro-organisms which evade the victim's immunological defences, enter and establish themselves within tissues of the potential host and multiply successfully (Gould 1994). A meeting of the European Tissue Repair Society and European Wound Management Society reached a consensus on the definition of an infected wound as follows (Leaper, 1998).

The wound, therefore, will generally have positive clinical signs (table 1) which could suggest clinical infection, (possibly be confirmed by swab results). The patient should then be considered for antibiotics.

Table 1: Signs of clinical infection

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|---|--|
| <ul style="list-style-type: none">• Sepsis• Pyrexia• Tachycardia• Raised white cell count• Feeling unwell | <ul style="list-style-type: none">• Bacteraemia• Suppuration• Cellulitis• Lymphangitis• Tachypnoea |
|---|--|

A colonised wound however, is defined as a 'multiplication of organisms without host reaction' (Davis 1998). Signs of colonisation can be increased pain, copious exudate and malodour without cellulitis, pyrexia or malaise could suggest colonisation (Hampton and Collins 2003). In this case, antibiotics are unnecessary and bacteria may be reduced through use of dressings such as IODOFLEX.

The following 2 case studies each had colonised wounds that required autolytic debridement and reduction in colonisation.

The case studies

The two patients had very large necrotic, sloughy and colonised pressure ulcers which had the potential to become critically colonised and clinically infected. IODOFLEX is used for the treatment of chronic exuding wounds such as leg ulcers, pressure ulcers and diabetic ulcers, particularly when infection is present or suspected. This particular preparation of iodine is an effective debridement and antiseptic agent for chronic exuding wounds. Therefore, IODOFLEX was applied to each wound and changed every three days.

Case study 1

Mrs X was a 72-year-old lady with seven year duration paraplegia. She had been nursed at home by her brother who had recently died and had led to her admission to a local nursing home. Mrs X was placed onto a Pegasus[™] alternating air mattress which kept her free from pressure damage over a period of 6 months. One evening, the mattress had been disconnected from the electrical supply, and this went unnoticed. Mrs X remained on the deflated mattress over night which meant she was directly on the solid metal bed base for a period of up to 8 hours. Due to her paraplegia, she was unable to identify the pain that should normally have alerted anyone to the danger. This high pressure caused terrible damage to both the soft tissues and to the underlying bone (figure 1).

Figures 1 to 5 provide the progress of the wound, from day one of the necrosis to final healing.

Mrs X had terrible damage from the unrelieved pressure that could have been life threatening (Hampton and Collins, 2003). IODOFLEX was used until the wound debrided – a period of 28 days



Figure 1: The pressure area developed after 8 hours on a metal bed base



Figure 2: The wound is debriding after 5 days of IODOFLEX treatment

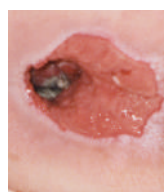


Figure 3: The wound is fully debrided with some loss of dead bone from the cavity. IODOFLEX has been discontinued

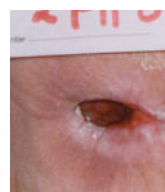


Figure 4: The wound is almost at closure after 11 weeks

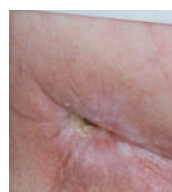


Figure 5: The wound has closed

Case study 2

A 65-year-old gentleman, (Mr Y) was admitted to hospital with a large sacral pressure ulcer. He normally lived at home with his wife as main carer and, due to his medical history of Multiple Sclerosis he had developed the sacral injury (Figure 6).

Within one week of treatment with IODOFLEX, the wound had completely reduced in odour (Figure 7). Within two weeks, the wound was almost debrided by autolysis. At the end of 25 days, the wound was fully debrided and the wound bed was prepared for healing (Figure 8). The IODOFLEX was discontinued.

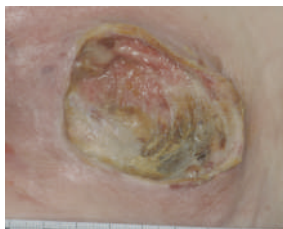


Figure 6: The wound is sloughy, colonised and malodorous

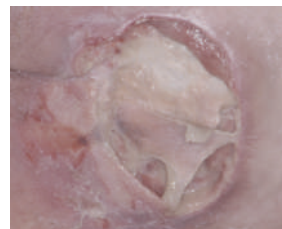


Figure 7: The wound is no longer malodorous but is sloughy and has enlarged by 30%

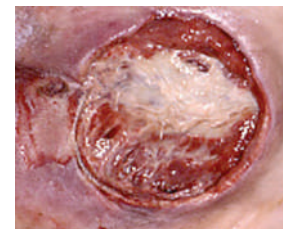


Figure 8: Wound has fully debrided and is prepared for healing

Results

Both of these wounds were clean and free of necrotic tissue within 10 days of treatment with IODOFLEX. Both wounds went on to full closure.

Discussion

Antibiotic treatment in infections is no longer recommended due to MRSA. If IODOFLEX can reduce the potential for critical colonisation, then the need for antibiotic therapy will be reduced. Sharp debridement is a dangerous practice if used by an inexperienced practitioner (Hampton and Collins, 2003) and is therefore, not always an option. By far the safest method of debridement and decolonisation is through the skilled use of appropriate dressings.

Conclusion

IODOFLEX successfully debrided these 2 wounds and reduced the potential for infection.

References

- Bryan, C., Drew, C., Reynolds, D. Bacteraemia associated with decubitus ulcers. Arch Intern Med. (1983); 143. 2093.
Gould, D. Understanding the nature of bacteria. Nursing Standard. (1994); 8:28. 29-31.
Hampton, S. Germ Warfare. Nursing Times. (1998); 93:40. 74-79
Sugarman, B., Hawes, S., Mushner, D. *et al*. Osteomyelitis beneath pressure sores. Arc Intern Med. (1983); 143. 683.

- Davis, E. Education, microbiology and chronic wounds. Journal of Wound Care. (1998); 7:6. 272-274.
Hampton, S., Collins, F. Tissue Viability. A comprehensive guide. (2003); Whurr Publications. London.
Leaper DJ. Defining infection. Journal of Wound Care Sep. (1998); 7:8 373