UNIT NO. 2

WOUND DRESSINGS: A PRIMER FOR THE FAMILY PHYSICIAN

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ABSTRACT

Given the myriad of choices available on the market, selecting the appropriate wound dressing remains a challenge for most healthcare workers. It is important to exercise discretion and adopt a systematic approach in dressing selection following wound assessment, as this will directly impact on rates of wound healing, which in turns affects the patient's quality of life and overall healthcare costs. This paper provides an overview of the common types of wound dressings in use currently and gives a brief synopsis of some of the latest advances in wound care technology and their applications in management of complex wounds. The consensus to date is for the use of hydrogels in the debridement stage, foams and low-adherence dressings in the granulation stage and hydrocolloids and low-adherence dressings for the epithelialization stage. Additional studies and research need to be undertaken to further evaluate the application of advanced wound technology in clinical practice.

Keywords:
Wound dressings, Wound care

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INTRODUCTION

It is of emerging importance that doctors are equipped with skills in proper wound management; since it is not only a common problem outside of the acute-care setting, but is of increasing prevalence in our rapidly ageing population in the community[1,2]. The estimated cost associated with healing of an ulcer can be as high as $45,000 and this does not account for the decreased quality of life, restricted mobility, psycho-social impact and/or intractable pain associated with the wound[1,3].

As physicians, we should familiarise ourselves with the different types of dressings available and know how to choose the appropriate dressings for different types of wounds. With a better understanding of the wound healing process at the cellular level, as well as interactions of the cellular components found within the chronic wound environment, better products are now being created to change the wound milieu to aid the healing process. This article aims to help the family physician navigate through the jungle of wound products; and shed some light on the latest advances in wound care technology.

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WOUND DRESSINGS AND FACTORS AFFECTING SELECTION

Wound dressings are described as primary where materials are placed into wound beds and interact with the actual wound surface, while those described as secondary refer to dressings that are used to cover and secure the primary dressings in place.

The key to understanding the various types of wound dressings is to learn the basic properties of each category of wound dressing. The dressings within each category are not identical, but they do possess many of the same properties.

Wound dressings can also be described as passive (inert) or interactive. **Passive dressings** simply serve a protective function and do not actively interact with wound properties to facilitate wound healing. An example is gauze. Although they remove excess exudates, the fibrous nature of the dressing increases its potential for leftover lint and particulate materials in the wound. This introduces foreign bodies into the wound environment and increases the risk of infection. Furthermore, it adheres to the wound surface causing trauma and pain during change. The damage to the neodermis delays wound healing. On the other hand, **interactive dressings** not only create a moist wound environment, but actively interact with local wound properties such as exudates and growth factors to accelerate wound healing. They promote healing through reduction of bacterial colonisation and level of exudates, retention of moisture, strengthening wound collagen matrix, removal of cellular products and protection of the epithelializing bed[4,5].

It must be stressed that an ideal dressing for all wound types does not exist (see Table 1: Characteristics of an ideal dressing). There is no single dressing that will be able to manage all the nuances within the wound environment. Adequate wound assessment is vital; this is the cornerstone of dressing selection. A wound is an evolving entity; the same dressing cannot be used from the beginning to the end. Dressings are selected according to wound characteristics; therefore when the wound changes, so should the dressing. At each dressing change, it is advisable to review the condition of the wound, as this allows for monitoring of the effectiveness of the previous dressing used. This includes measurement of the wound, as well as taking photographs. Review the treatment objectives and select the appropriate dressings (See Figure 1).

An invaluable consensus list of recommendations published in 2007 by a panel of wound experts advocated the use of hydrogels in the debridement stage, foams and low-adherence dressings in the granulation stage and hydrocolloids and low-adherence dressings for the epithelialization stage[6]. The panel also made specific suggestions regarding the use of low adherence dressing on fragile skin, alginates on bleeding wounds and activated

FIGURE 1. REVIEW TREATMENT OBJECTIVES AND SELECT APPROPRAITE DRESSINGS

Patient A	Treatment objective	Types of dressing	Outcome
	1. Determine the underlying cause of infection 2. Identify the severity of infection in the wound 3. Remove or reduce bacterial load using antimicrobials and debridement of non-viable tissue	• Silver dressing • Cadexomer Iodine • Metronidazole gel • Systemic antibiotics	Reduce inflammation and infection

charcoal dressings on malodorous wounds[6]. Besides the recommendations, the following points should also be assessed when choosing the appropriate dressings[7,8,9]:

- Etiology of the wound
- Wound site, size and position
- Current state of the wound and surrounding skin
- Amount of wound exudate
- Presence of infection
- Characteristics of wound dressings (Table 1)
- Contraindications to dressing use e.g. allergies
- Ease of application, change and removal
- Need for secondary dressing

Hand in hand with dressing selection comes the question of frequency of dressing change. This is a decision made based on clinical judgment. If the dressing is soiled, loose, slipping or curling at the edges, it is obvious that it should be changed. If there is accumulation of fluid and/ or debris and the dressing is saturated, it needs change. If infection is present, increased frequencies of change need to be considered. Most dressings come with manufacturer recommendations on the frequency of change or how long each dressing can maintain its efficacy; however these should only be used as guidelines, clinical judgment still rules.

The ideal wound dressing should provide the optimum environment to meet treatment objectives and protect the wound from further injury. See Table 1.

CATEGORIES OF WOUND DRESSINGS

Traditionally, dressings are classified into seven different categories. These are gauze, films, alginates, foams, hydrogels,

TABLE 1. CHARACTERISTICS OF WOUND DRESSINGS

Characteristic of dressings:	Rationale:
Promotes or retains moisture	Dry wound bed inhibits wound healing
Manages excess exudates	Prevents maceration and further wound breakdown
Provides thermal insulation	Reducing temperature at wound bed reduces fibroblast activity
Impermeable to bacteria	Prevent exit and entry of bacteria
Causes minimal trauma on removal	Prevents damage and reduces pain
Cost effective	Makes best use of available resources
Available in hospital and community	Accessible to all carers

hydrocolloids, and composite dressings. However, with better understanding of wound healing and improvement in technology such classification no longer suffices (Refer to Table 2 for types of common wound dressings and their indications).

For practical purposes, the dressings in this paper are broadly divided into five categories: Moisture-retentive dressings, absorbent dressings, anti-microbial dressings, composite dressing and protective dressings. The applications and limitations of each will be discussed in further detail in each section.

1. Moisture Retentive Dressings

Moisture in the wound environment is needed to increase epidermal cell movement, retain growth factors, increase angiogenesis and decrease fibrosis[10]. These dressings not only serve as an effective barrier to trauma and microbes but allow for less frequent dressing change and reduce pain and scar formation[10].

Hydrocolloids - Made from gelatin, sodium carboxymethylcellulose or pectin with a polyurethrane waterproof outer layer, these are adhesive, occlusive and conformable dressings[11]. By trapping protein and cytokine-containing exudate, hydrocolloids promote autolytic debridement, increase cellular proliferation, and encourage granulation tissue formation and epithelialisation of low to moderately exudative wounds[4,5,10,11]. The advantage of this dressing is that it can be left in place for 2-4 days provided that the wound is not infected[10]. Users must be aware of the possible maceration to surrounding skin and its tendency to produce a brown and malodorous exudate often mistaken for infective exudates[10,11].

Hydrogels - They are composed of a matrix of insoluble modified carboxymethycellulose polymers with propylene glycol humectant[4]. Hydrogels contain 60-70% water and are available in sheets or liquid gel dressings embedded in gauze[12]. These soothing and absorbent dressings are most ideal for wound rehydration facilitating natural autolysis of necrotic tissue[4,5]. It is non-adhesive, easy to use (requires change every 2-3 days), cause minimal pain on removal and is cost effective[11]. A secondary dressing is usually needed to hold hydrogels close to the wound bed.

Films - Films are made from thin and semi-permeable sheets of polyurethane[5,12]. They are most useful in holding primary dressings in place especially over the joint areas and uneven wound surfaces as they are highly adherent and flexible[5,12]. They are frequently used to protect the skin from friction and shear forces but extra caution must be practiced when removing these highly adhesive dressings[7,10]. Being transparent and permeable to air and water vapour, the wound bed and moisture level is easily visualised[5,10].

2. Absorbent Dressings

Absorbent dressings play an important role in the management of moderate- heavily exudative wounds. Their main function lies in absorbing exudates whilst minimally adhering to the wound bed[11]. The amount of fluids that can be handled varies with each product. These dressings are more costly compared to the traditional gauze but they have been found to reduce overall cost and treatment time[11].

Alginates - Alginates are composed of calcium or sodium salts of alginic acid derived from brown seaweed (Phaeophyceae)[4,13]. They are available in sheets, ribbons, beads or pads[10]. Alginates partially dissolve on contact with wound fluid to form a gel that is able to absorb up to 20 times its own weight hence it is recommended to be used on wounds with moderate to heavy level of exudate[5,11]. They promote healing and granulation by maintaining a physiologically moist environment ideal for healing. An important advantage of alginates lies in its haemostatic property allowing it for use in minor bleeds[4,11]. Some have added silver for antimicrobial effects. Alginate dressings can be used to fill a cavity but should always be covered with a secondary dressing. Issues limiting the use of alginates include peri-wound maceration and residual fibres in the wound after removal[11].

Hydrofiber - These are white fibrous dressings compose of 100% Hydrofiber (sodium carboxymethylycellulose)[4,10]. Hydrofibers are best used for moderately exudative wounds because of its capacity to absorb large amounts of wound exudate and bacteria to create a soft, cohesive gel that conforms to the wound surface[4,10]. This helps with autolysis and removal of necrotic material from the wound surface. Some have added silver for its antimicrobial properties[4]. It can be easily removed in one piece without causing trauma to the underlying wound[4,10].

Foam dressings - These are semi occlusive dressings manufactured as polyurethrane or silicone foams. They are non-adhesive and much thicker than most other dressings. Being soft and conformable, they can provide padding over bony prominences such as heel, ankle, sacrum and hip[10]. Foams are also absorbent and can be used over mildly and moderately exudative wounds[10]. They have an additional benefit of providing thermal insulation and moisture vapour and oxygen to the wound, allowing for enhanced rates of wound healing[5]. Some have added silver for antimicrobial effects and they can last up to seven days.

3. Antimicrobial Dressings

It has been found that the presence of any trace of β-hemolytic streptococci or bacterial concentration over 10^5 or 10^6 bacteria colony-forming units per gram of tissue in wound is associated with impaired healing[14]. The recommendation to date is to reduce or eliminate the bioburden through a combination of frequent debridement, vigorous physical cleansing, and use of appropriate dressing material, extensive high-dose systemic antibiotics or topic biocides to disrupt its reconstitution[15]. The following section describes some of the readily available types of antimicrobial dressings.

Cademoxer Iodine - Cademoxer iodine is released from a starch lattice when it comes in contact with the wound exudate to exert its broad spectrum bacteriostatic activity against organisms including Staphylococcus aureus and Pseudomonas aeruginosa[15]. 1 g of Cademoxer iodine is able to absorb up to

7ml of fluid, making it a useful dressing for infected wounds[5]. Because iodine may be absorbed systematically, it should be avoided in patients with thyroid disorders[5].

Silver – Silver comes in many different forms including elemental, Inorganic and organic silver available in various formulations[10]. It combines properties of broad spectrum antimicrobial action, toxin and odour control. Upon exposure to moisture, the inert metallic silver (Ag^0) is converted to the reactive silver ion, Ag^+, which is the active antimicrobial agent[15]. Once it comes in contact with wound exudate, there is exchange of Ag^+ (dressing) with negatively charged particles such as DNA, RNA and chloride ions[16]. Its broad spectrum bactericidal action covers gram-positive, gram-negative bacteria, yeast and fungi. Silver is not only of low toxicity to skin but rates of bacteria resistance to Ag^+ have been found to be extremely low[16]. Silver preparations are available in the form of silver nitrate and silver sulfadiazine and nanocrystalline silver technology[16]. Whilst in the past, silver nitrate preparations had to be applied up to twelve times a day to maintain its effectiveness, the newer preparations can exert effects that last up to 7 days[16]. A major disadvantage of silver product is its potential to cause discolouration or irritation to surrounding skin (argyria)[11].

Honey - A recent Cochrane review showed that honey may improve healing times in mild to moderate superficial and partial thickness burns though it has limited benefits for other types of ulcers[10,17]. Honey dressings have gained popularity in treatment of other wounds in recent years due to its anti-inflammatory, antimicrobial and debriding properties[18]. The nectar from the Leptospermum plants is harvested by the honey bee (Apis Mellifera) and it is formulated into a gel or impregnated dressing[18,19]. The high sugar content results in a highly osmolar wound environment which makes it non- conducive for bacterial growth[18,19]. In addition, it has been shown to stimulate granulation and epithelialization and reduce pain and edema[18].

4. Composite Dressings

Composite dressings are multi-layered dressings that can be used as primary or secondary dressings. They usually comprise of three layers, an inner non-adherent layer, a middle area that absorbs and wicks away moisture, and an outer semipermeable film. The inner non-adherent layer prevents trauma to the wound bed during dressing change, the middle layer can consist of a hydrogel, hydrocolloid or alginate which provides a moist wound healing environment and the outer layer serves as a barrier to bacteria. These dressings are pre-packaged, have less flexibility in terms of indications of use and can be costly. Their water proof nature makes them a popular choice for areas prone to moisture assault from incontinence.

5. Protective dressings

Gauze- plain gauze, made of cotton, is inexpensive, readily available, and most useful as secondary dressings in most wounds. It is available in square dressings or rolled forms[10]. Gauze may promote wound dessication[16] in wounds with minimal exudates unless they are impregnated with zinc, iodine or petrolatum or used in combination with another type of dressing.

Non adherents - Composed of porous silicone or tulles, they are often used as a primary dressing for lightly exuding or granulating wounds[4,5,12]. Some have limited capacity for absorption and strikethrough can occur; while others are more absorbent and can be used for moderately exudative wounds. Being non adherent, these dressings are most useful when pain during dressing application and change is the main concern or in patients with sensitive or fragile skin[5].

ADVANCES IN WOUND CARE TECHNOLOGY

The art of wound care has evolved throughout the ages. A papyrus dating back to 3000 BC was discovered by American Egyptologist Edwin Smith in 1862. When it was finally translated in 1930, it was found that the ancient Egyptians used a paste out of honey, grease and lint to remove necrotic tissues and promote healing in open wounds[10]. Strips of linen and sticky gum were described to have been used to close wounds and green copper pigment and chyrsoedla used as antiseptics in open wounds. During the war time in the 19th century, various remedies from boiling oil to concoctions of turpentine, egg yolks and rose oil were used to treat firearm wounds[10]. Today, the wound care scene is going through another wave of revolution with the invention and application of novel techniques and modalities. Although most are resource intensive and lack the high level evidence to validate their integration into regular clinical practice, their contribution to wound care should not be undermined as their potential impact on the total cost of care in the long term may justify their higher cost per treatment[20]. This section provides a brief summary of some of the advances in wound care.

Maggot debridement therapy (MDT)

The first postulated mechanism of action of MDT is from the wriggling and the probing of the hook and the mandibles of the maggots on the wound bed[23]. It was later found that the proteolytic action from the saliva of the green bottle fly larvae (Lucilia Phaenicia) served as a form of biologic debridement through liquefaction of necrotic tissue, providing antimicrobial and wound healing effects[10]. The larvae used need to be medical grade sterile and left in the wound bed for 48-72 hours and changed[10]. To optimise effects of MDT, the maggots require optimal body temperature with adequate oxygen and moisture. Indications for maggot therapy include disinfection of chronic sloughy necrotic wounds[23]. In the past few years restructured hospitals like Tan Tock Seng Hospital; Singapore General Hospital and National University Hospital have been offering maggot therapy for wound debridement. Once the wound is deemed suitable for maggot debridement, the maggots are placed on a gauze or in a bag and applied onto the wound bed. After 2 days the dressings are removed and the maggots are flushed away by saline. This treatment typically takes up to 2 to 3 applications over the course of a week.

Growth factors - Recombinant human platelet derived growth factor (PDGF)

Growth factors (GFs) promote angiogenesis, stimulate fibroblasts and granulation tissue formation[20]. Beneficial effects

TABLE 2. TYPES OF COMMON WOUND DRESSINGS [4, 5, 7, 10, 12, 16]

Types of Dressing	Indications	Special Considerations	Examples
Hydrocolloids			
	• Dry and desiccated wounds • Abrasions • Necrotic eschars • Wounds with minimal exudates • Superficial or healing wounds	• Not recommended for highly exudative or infected wounds, diabetic foot ulcers and other wounds requiring frequent wound inspection • Beware fragile skin due to potential for maceration of surrounding skin • During application, foams size must be extended beyond wound edges to ensure good adherence • Silver can be applied under the hydrocolloid dressing centrally for antimicrobial effects	• Duoderm • Comfeel
Hydrogels			
	• Very dry and minimally exuding wounds • Necrotic wounds • Arterial ulcers • Dry venous ulcers • Warfarin induced necrotic wound • Rheumatologic ulcers	• Gels may be squeezed directly into cavity and covered with a secondary dressing • Periwound skin may need protection from maceration (PP)	• Purilon • Duoderm Hydroactive Gel
Alginates			
	• Recommended for highly exudative and deep wounds e.g. chronic pressure ulcers • Can also be used for split skin graft donor site and • diabetic foot wounds, • heavily exudative venous leg ulcers	• Users may experience foul odour but may be from seaweed rather than wound itself • Not recommended for use on dry wounds • Due to low tensile strength, avoid packing into deep sinuses • Can be used as part of a multilayer compression wrap on lower limbs	• Algisite • Algisorb • Seasorb • Kaltostat • Biatain Alginates
Hydrofiber			
	• Moderately exudative wounds	• Not recommended for use in bleeding wounds, dry or necrotic wounds • Due to low tensile strength, avoid packing into narrow deep sinuses • Cost effective	• Aquacel • Aquacel-Ag • Aquacel-Ag rope

Types of Dressing	Indications	Special Considerations	Examples
Foams (polyurethranes or silicone)			
 	• Wide range of moderate to highly exudative wounds • Wounds subjected to sustained or unrelieved pressure	• Occlusive foams without silver should not be used on infected wounds • Not suitable for dry or eschar covered wounds • May require secondary dressing to keep in place	• Allevyn, • Allevyn Gentle • Mepilex Ag • Mepilex Lite • Biatain Ag • Hydrasorb
Cademoxer iodine			
 	• Chronic exuding infected wounds • Infected diabetic ulcers • Pressure ulcers	• Beware hypersensitivity to iodine • May need systemic antibiotics if evidence of deeper tissue infection	• Iodosorb powder, ointment and paste
Silver barrier dressing			
	• Infected wounds especially when antibiotic resistance is a concern	• May need systemic antibiotics if evidence of deeper tissue infection • Silver absorbed into the skin may cause argyria, which is a permanent depigmentation of skin	• Silver Nitrate • Silver sulphadiazine • Ionic silver available in acticoat
Non adherent synthetic			
	• Mainly used as a primary dressing on lightly exuding or granulating wounds • Painful or friable wounds • Wounds requiring application of topical medications	• May require secondary dressing • Strikethrough may occur with heavier level of exudates	• Primapore • Mepitel • Meloline

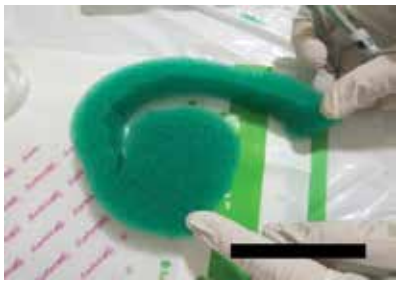
Types of Dressing	Indications	Special Considerations	Examples
Films/ membranes			
 	• Primary or secondary dressings for minimally exudative or dry wounds • Superficial lacerations • "difficult" anatomical sites for e.g. over joints • Minimally exudative wounds including thin burn wounds, venous catheter sites, donor sites for split skin grafts or partial thickness wounds	• Skin around wound must be intact for a good seal • can be used as a secondary dressing in combination with alginates or hydrofibers • Avoid in draining or infected wounds	• Tegaderm • Opsite
Gauze			
	• Highly exudative wounds • Useful as a secondary dressing	• May adhere to viable areas of wound bed and cause pain during removal	• Gauze • Vaseline gauze • Xeroform and • Telfa
Composite Dressing			
	• Use as Primary or secondary dressing	• Combine physically distinct components to a single product to provide multiple functions • Serve as bacterial barrier, absorbent and a adhesion	• Primapore • Versiva

of GFs such as platelet derived Growth Factor (PDGF) and Fibroblast Growth Factor (FGF) in wound healing have been demonstrated in clinical trials[20]. Research is currently ongoing with trials on hepatocyte growth factor and other cell therapy products that contain lymphocytes, monocytes and neutrophils[20]. Becaplermin is a FDA approved PDGF- derived gel that has shown efficacy in diabetic ulcer healing; however, it is also associated with increased rates of malignancy[10].

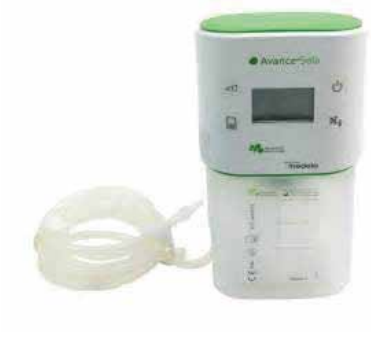
Bioengineered skin substitutes

Both synthetic and cultured autologous engineered skin can be used as a source of non- senescent fibroblasts in promoting wound healing[16]. The two major types currently available are living and non-living cell/tissue[17]. Problems of rejection and possible transmission of disease are potential setbacks in the development of allografts and xenografts. Skin substitutes have established its place mainly in the realm of burns and large wounds[16].

FIGURE 2. NEGATIVE WOUND PRESSURE WOUND THERAPY

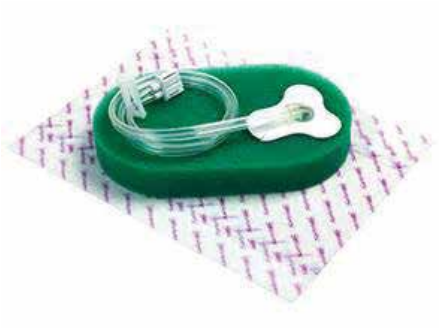
Patient B	NPWT/VAC dressing
 Abdominal wound with 2 gaping wound after alternate removal of stitches	
 Prepare required foam size and silicone dressing according to wound size for insertion to wound bed	 Place sterile film on abdominal wound first and cut film open to expose the two wound cavity.
 Insert foam with silicone wrap to wound bed. Seal wound with sterile film again	 On the surface of the wound, place 2 pieces of foams over the two exposed wound areas.
 Connect the two pieces of foams with a piece of bridging foam. Seal with sterile film again. Create a small slit at the distal wound site for placement of the transfer pad device.	 Transfer pad device sealed with sterile film and connect to the canister and pump

Maintain on negative pressure 125mmHg on continuous mode. Change VAC dressing every three days



Vacuum device which maintain a continuous negative pressure

Wound after discontinuation of NPWT



Foam dressing

Negative pressure wound therapy

NPWT has been in use since 1995 for the following: chronic and acute wounds, dehisced incisions, chronic diabetic wounds, pressure ulcers, grafts and flaps[22]. It is non-invasive and acts by delivering negative pressure at the wound bed[22]. The exact mechanism of action is not known although it has been postulated to work via promoting changes at the cellular level to enhance formation of granulation tissue, adhesion of wound edges and reducing exudates[21,22]. The controlled subatmospheric pressure improves local oxygenation and peripheral blood flow[19]. NPWT has also been found to reduce the overall volume and dimensions of the wound, reducing the need for complex plastic reconstruction needed for wound closure[16].Contraindications for NPWT include fistulas to organs and body cavities, eschars, non-debrided necrotic tissue, untreated osteomyelitis, malignant wounds, bleeding wounds, patients on anticoagulants[22]. See Figure 2.

Oxygen therapy

Hyperbaric oxygen therapy (HBOT) is usually used as an adjunct in wound management. It consists of a course of multiple treatments in a pressurised sealed chamber containing 100% oxygen[16]. A synergistic response between oxygen and growth factors have been demonstrated in addition to supplying oxygen to the wound site[16]. Oxygen is needed for neutrophils and macrophages mediated bacterial killing as well as for tissue repair processes[16]. In addition, pressurised oxygen has been shown to stimulate stem cell and endothelial progenitor cell release from bone marrow, promoting wound healing[16]. HBOT is indicated for use in crush injuries, compartment syndrome, acute traumatic ischemia and ischemic reperfusion injuries, radiation injuries, compromised skin grafts and refractor osteomyelitis and anaerobes infected wounds[16]. It has been found to be most useful in reducing the rates of major amputation in diabetic foot ulcers[19]. There are few contraindications for hyperbaric oxygen therapy and these include reactive airway disease, untreated pneumothorax and concurrent chemotherapy[16]. Other side effects which can occur with use of HBOT include otic or sinus discomfort, claustrophobia and oxygen toxicity at high pressures[16].

Ultrasound therapy

By using different frequencies of ultrasound (Low frequency- Hertz in thousands range and high frequency- Hertz in millions range), it has been discovered that non-healing or stagnated wounds can be stimulated to progress on in the cycle of wound repair[20]. It works via penetration of deep tissue to stimulate cells beneath the wound bed and promotes debridement of necrotic tissue[20]. Ultrasound therapy has been tried and tested in the treatment of a variety of wounds including diabetic foot ulcers, chronic venous ulcers, pressure sores, and burns and for bone debridement[20]. Currently, there is limited evidence supporting its routine use[19].

Low energy light treatment or low- power laser therapy

Laser therapy makes use of low energy band lasers to promote fibroblast activity, collagen metabolism and epithelialization via increasing reactive oxygen species, stimulating gene expression, promoting angiogenesis and reducing inflammation[20]. It is used in venous leg ulcers, diabetic ulcers and burns[19]. Again, there is

limited evidence supporting its routine use in clinical practice.

CONCLUSIONS

With an ageing population and the rising incidence of chronic diseases such as diabetes and peripheral vascular disease, the cost of wound care will inevitably become a cause for concern in our local healthcare system. Choosing the right wound dressing remains one of the most critical considerations to enhance rates of wound healing. There is no one dressing that fits all wounds and current selection of dressings is based on wound assessment and treatment objectives. The experiences and knowledge of the wound care practitioner and availability of dressings on the market also plays an important role in wound management. Wound management should be based on a systematic, patient-centred and multidisciplinary approach as this has been repeatedly demonstrated to significantly increase healing rates, reduce wound associated pain and the frequency of treatments needed[1,24]. Of equal importance is the proper education of patients and care givers which has been shown to improve compliance to treatment and overall outcome[14]. Today's rapid technological advances in wound care should serve as an impetus for us as medical professionals to positively impact medical education and the management of wounds.

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LEARNING POINTS

- **There is no single dressing that will be able to manage all the nuances within the wound environment currently. Adequate wound assessment together with adequate knowledge of basic properties of each dressing category is vital and this is the cornerstone of dressing selection.**
- **A wound is an evolving entity; the same dressing cannot be used from the beginning to the end. Dressings are selected according to wound characteristics; therefore when the wound changes, so should the dressing.**
- **At each dressing change, it is advisable to review the condition of the wound, as this allows for monitoring of the effectiveness of the previous dressing used. This includes measurement of the wound, as well as taking photographs.**
- **The frequency of dressing change made based on clinical judgment. If the dressing is soiled, loose, slipping or curling at the edges, it is obvious that it should be changed. If there is accumulation of fluid and/ or debris and the dressing is saturated, it needs change. If infection is present, increased frequencies of change need to be considered.**