Evidence Based Procurement Board - Advice Statement

Topic: Antimicrobial Wound Dressings (AWDs)

Issue Date: October 2018

The following statement should be read in conjunction with the recommendations and treatment algorithm text included in the second section of this document. .

Following consideration of a number of Health Technology Assessments, including the SHTG (Scottish Health Technology Group) Health Technology Assessment of "*Antimicrobial wound dressings (AWDs) for chronic wounds*", and recommendations from the EBPB expert group on AWDs, the EBPB advise that:

1. Antimicrobial dressings should not routinely be used on non-infected acute and chronic wounds;
2. Antimicrobial dressings should be considered **only** when there are clinical signs or symptoms of localised infection, **or** where localised infection is suspected as a cause of non-healing. They should not be used to treat MDRO (multi drug resistant organism) colonised wounds which do not fall into this category;
3. Antimicrobial dressings should only be recommended/prescribed by specialist staff (for example tissue viability nurses or specialist podiatrists) as designated by the Health Board or Trust. Their use requires regular review of the requirement for AWDs by the clinician;
4. To ensure appropriate control and use of antimicrobial dressings, the EBPB *AWD Recommendations and Algorithm* (page 3 and onwards of this document) should be adopted by Welsh NHS organisations.

Definition of AWD

An AWD is a dressing that carries or delivers an antimicrobial agent. A variety of AWDs are available, and each has different antibacterial and fluid-handling properties. Examples of the antimicrobial agents found in dressings used in NHS Wales include: silver, iodine (povidone-iodine and cadexomer-iodine), honey, and polyhexanide (PHMB)[1].

Additional Information

1. Health Technology Assessment No. 13 on antimicrobial wound dressings in chronic wounds, Health Improvement Scotland (2015). [Available online - last accessed 5th Feb 2018].

2. Health Improvement Scotland - Resources to guide the management of suspected infection in chronic wounds. Resources available on the HIS Website. Published: 19 January 2018, last accessed 5th Feb 2018.

This advice is to be reviewed within 2 years of the publication date. If alternative products become available with substantial new evidence within this period, the EBPB will ask the expert group to reconvene.

1 Based on the description of an AWD in the SHTG HTA Report 13.

EBPB Antimicrobial Dressings Subgroup Recommendations and Algorithm

Date: 20th Aug, 2018

Introduction

The group agree with and support the SHTG Health Technology Assessment report 13 on antimicrobial wound dressings (AWDs) for chronic wounds. The group have also considered the NICE Evidence Summary (ESMPB2) and are aware of other guidelines which are available.

The group also agree that there is a need for high quality robust evidence on the use of AWDs as a topical treatment for infection in all wounds (not just chronic wounds) and for good quality economic evaluations. They believe that future studies should explore the impact of reduced wound infection on other patient outcomes.

An AWD is a dressing that carries or delivers an antimicrobial agent. A variety of AWDs are available, and each has different antibacterial and fluid-handling properties. Topical antimicrobials used in NHS Wales include: silver, iodine (povidone-iodine and cadexomer-iodine), honey, and polyhexanide (PHMB)[2].

Recommendations

Recommendation 1: *The routine use of AWDs to treat acute and chronic wounds is not recommended.*

Recommendation 2: *In the absence of sufficient clinical evidence to guide decision-making, NHS Wales should adopt a consistent approach to appropriate usage of AWDs in topical treatment of wound infection in acute and chronic*

2 Based on the description of an AWD in the SHTG HTA Report 13.

wounds. An algorithm can be found later in this document which is recommended for adoption within NHS Wales.

Recommendation 3: *When selecting a dressing for people with acute or chronic wounds, alongside a comprehensive clinical assessment, consider the factors of importance to the patient such as odour, pain, discomfort, leakage, frequency of change and mobility as well as healing.*

Recommendation 4: *Having first taken into account patient and wound-specific factors, the cost effectiveness of dressings relative to their benefits should guide their use, taking into account the total episode of care cost, not just the unit cost of the dressing.*

Recommendation 5: *National patient information and educational material should be developed in line with the principles of prudent healthcare, which can be used as an aid to support shared decision-making between patients with acute and chronic wounds and healthcare professionals.*

> ***NOTE:*** *The All Wales Tissue Viability forum will consider leading on this in partnership with the EBPB expert group and other national groups.*

Recommendation 6: *There is a need for standardised and accessible evidence-based education and training on the appropriate use of AWDs in acute and chronic wounds provided by local specialists.*

> ***NOTE****: An appropriate organisation to develop this in Wales would be WWIC who have expressed an interest in developing this material.*

Recommendation 7: *The Welsh NHS Efficiency Board in Welsh Government would be well placed to identify a mechanism for implementing these recommendations.*

Welsh NHS Algorithm for use of AWDs

Introduction

When treating a patient with a wound, symptoms and signs of infection must be present before use of an AWD is considered.

However, in certain patients with specific wound types such as diabetic foot wounds or burns, or in immunosuppressed patients, some of the signs and symptoms of infection might be less evident. A comprehensive assessment of the patient is required to rule out causes other than non-systemic localised infection.

Terminology related to wound infection can be confusing, with terms such as ‘colonisation’ and ‘local infection’ being used interchangeably. The World Union of Wound Healing Societies classifies infected wounds into 5 categories, including Localised Infection (see Appendix A for further information) which is the main focus of the following algorithm.

Signs and Symptoms of localised infection

The most commonly observed signs and symptoms of localised infection which might prompt use of AWDs, include:

- pain or increased pain
- erythema/redness
- heat
- wound deteriorating or increasing in size
- exudate: thick, haemopurulent or purulent with high volumes
- inflammation/swelling/oedema

- delayed or stalled healing
- malodour

1. Algorithm for stages of wound infection and treatment recommendations

IMPORTANT:

Stages 1 - 4 below are stages of wound infection.
Patients may present with signs and symptoms at ANY stage of the algorithm.
Clinicians do not have to start at Stage 1.

When following the treatment advice in the stages below, ensure dressing changes are undertaken in line with manufacturers' instructions. Periods referred to below are related to periods between assessments, not dressing changes.

Stage 1

1. Definition

When 2 or more signs of contamination/colonisation are present, but healing is progressing normally with the following wound characteristics:

- Exudate - low to moderate volume
- Odour – minimal
- Pain – minimal
- Slough/necrosis.

2. Treatment

1. DO NOT SWAB.
2. Identify the aetiology of the wound and refer to an appropriate specialist for advice if you have any concerns *e.g. vascular surgeon, lymphoedema team* .
3. Refer all diabetic foot wounds to Podiatry/MDT.
4. Optimise wound healing with debridement and non-antimicrobial dressings. If no progress after 2 weeks re-assess the wound and review the treatment plan.

5. **If signs of localised infection go to Stage 2**.

Stage 2

3. Definition

When healing is not progressing normally or the wound is deteriorating, and the wound exhibits two or more of the following characteristics:

- Change in pain levels in or around the wound
- Erythema/redness
- Exudate - high volumes in conjunction with changes in viscosity and consistency
- Friable and bleeding granulation tissue
- Heat
- Hypergranulation tissue
- Inflammation/swelling/oedema
- Malodour
- Slough/necrosis.
- Superficial bridging

4. Treatment

1. DO NOT SWAB.
2. Undertake physical cleansing of the wound to remove debris from the wound bed;
3. Commence treatment with a topical AWD;
4. Monitor wound progress, review at 2 weeks (the “two week challenge” as per Wounds International consensus – see bibliography, reference 4):
    a) If no signs of infection, STOP using the AWD and return to Stage 1 point 4 for actions

b) If improving, but there are still signs of infection, continue with AWD and review weekly until no signs of infection

c) If static or deteriorating, review AWD choice and seek further specialist advice regarding other treatment options;

5. **If signs of spreading infection, go to Stage 3**.

Stage 3

Definition

When the wound is deteriorating with some of the following characteristics:

- Change in exudate: thick, haemopurulent or purulent
- Erythema
- Localised cellulitis
- Localised oedema
- Malodour increasing.
- Pain increasing

5. Treatment

IMPORTANT: If cellulitis is present, start systemic antibiotics and only then continue with the following steps.

1. Clean wound and then swab for microbiology. Follow the IWII protocol reproduced in Appendix B (reference 5).
2. Start or continue topical AWD.
3. Consider starting systemic antibiotics in accordance with National policy and local guidelines.
4. Review wound swab results when available
5. Reconsider diagnosis and treatment plan including antibiotic regime.

6. If systemic antimicrobials are considered, follow the principles of "*Start smart then focus"*.(See bibliography – reference 6)
7. Monitor wound progress, review at 1-2 weeks – see Stage 2, point 4, for actions.
8. **If signs of systemic infection, go to Stage 4**.

Stage 4

Definition

When 1 or more signs or symptoms of systemic infection are present including some of the following patient and/or wound characteristics, this may lead to sepsis if not treated:

- Spreading cellulitis
- Pus/abscess
- Patient systemically unwell
- Pyrexia and increasing NEWS score
- Raised white cell count/CRP
- Wound breakdown with or without satellite lesions.

6. Treatment

- If rapid deterioration or suspected systemic infection or sepsis, immediate referral for urgent medical/surgical advice and consider SEPSIS 6 (See bibliography, reference 7).
- AWD are unlikely to contribute much to the patient's well-being at this stage.
- After treatment of the systemic infection is complete, if a wound is still present, consider entering the algorithm at one of the previous stages.

Supporting Information

- NWSSP Procurement Services – Wound Management Contract brochure[3]

Acknowledgements

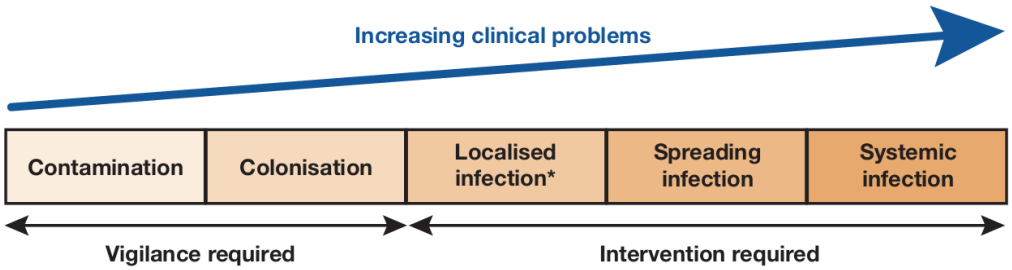
The recommendations and algorithm, are based on the SHTG HTA no 13, the Ruth Ropper Lothian Ladder Version 2, and the latest information produced by the short life working group set up by the Effective Prescribing and Therapeutics Branch at Scottish Government. The EBPB expert group amended these taking into account the Welsh NHS context and practise.

Bibliography & Resources

1. SHTG. Health Technology Assessment No. 13 on antimicrobial wound dressings in chronic wounds, Health Improvement Scotland (2015). [Available online - last accessed 5th Feb 2018].
2. Health Improvement Scotland. Resources to guide the management of suspected infection in chronic wounds. Resources available on the HIS Website. Published: 19 January 2018, last accessed 5th Feb 2018.
3. NICE Evidence Summary - Chronic wounds: advanced wound dressings and antimicrobial dressings. ESMPB2, March 2016.
4. Wounds International. International consensus: Appropriate use of silver dressings in wounds. 2012.
5. International Wound Infection Institute: Wound infection in Clinical Practice – Principles of Best Practice 2016.
6. Public Health Wales – Antimicrobial stewardship - “Start smart – then focus”. NHS Wales, PDF available.
7. Sepsis Trust. Sepsis Six Screening and Action tool. [PDF file. Last accessed 14th Feb 2018]

3 Only available on the NHS Wales network.

Appendix A - World Union of Wound Healing Societies – Classification of Infected Wounds



*Localised infection may or may not be accompanied by the classical signs and symptoms of inflammation. When it is not, various terms have been used, eg critical colonisation (Figure reproduced with the kind permission of WUWHS)

Appendix B - Levine technique for obtaining a wound swab.

The following table is from Table 3, page 12 in Reference 5.

Table 3: Levine technique

Step	Action	Further information
1	Cleanse and debride wound prior to wound culture	■ Inform and seek permission from patient to obtain specimen ■ Cleanse wound using warm normal saline ■ Debride non-viable tissue as required ■ Cleanse wound again
2	Moisten culture tip	■ Moisten culture tip with sterile normal saline, especially with dry wounds
3	Where to obtain specimen	■ Obtain specimen from cleanest area in the wound ■ Where possible, do not obtain from slough or necrotic tissue
4	Technique	■ Inform the patient that procedure may cause discomfort ■ Place wound culture into wound ■ Firmly press swab into wound and rotate ■ Using a sterile technique, place swab into culture container
5	Label appropriately	■ Patient label on culture container and pathology slip ■ Provide site, time and initials of who obtained specimen (e.g. left medial distal malleolus wound) ■ Provide as much relevant history as appropriate: ■ Current antibiotic or medication (steroid) ■ Comorbidity (DM) ■ Specific microbe suspected (*Pseudomonas aeruginosa*) ■ Provisional diagnosis of wound ■ Duration of wound
6	Apply dressing as appropriate	■ Medicated dressings may be appropriate ■ Moisture management and wound bed preparation principles should be adhered to

Table reproduced with the kind permission of IWII (Reference 4).

Appendix C – Membership of the EBPB AWD expert group

- Peter Phillips, Director of the Surgical Materials Testing Laboratory. (SMTL)
- Keith Harding, Medical Director, Welsh Wound Innovation Centre (WWIC)
- Kirsty Mahoney, Tissue Viability Nurse,,Cardiff and Vale UHB & WWIC
- Jane James, Tissue Viability Nurse, Hywel Dda UHB
- Mark Francis, Pharmacist, ABM ULHB – Pharmacy
- Matt Alderman, Operations Manager, SMTL
- Gavin Hughes, Deputy Director, SMTL
- Joanna Ford, R&D Officer, SMTL.
- Darren Holloway, Senior Category Manager, NWSSP Procurement.
- Thomas Dumbleton, category Manager, NWSSP Procurement.
- Adam Fox, Podiatrist, Cardiff and Vale UHB – Podiatry
- Tracey Gauci, Infection Control and Prevention Nurse, Honorary Member of the Infection Prevention Society (IPS) and Co-ordinator of the IPS Welsh Branch (formerly representing ABMUHB, now employed by GAMA Healthcare)
- Gail Lusardi, Consultant Nurse, HCAI & AMR programme, Public Health Wales
- Emrys Williams, Consultant Microbiologist, Public Health Wales
- Nicholas Reid, Consultant antimicrobial pharmacist, HCAI & AMR programme, Public Health Wales.