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Guidance produced by the Primary Care Laboratory Interface Group in association with the Tissue Viability Team: 11th October 2013. Links updated December 2015.

Chronic Wounds: Swabs and Treatment

All chronic wounds contain bacteria; most are colonisers, but some cause clinical infection.

- **A bacteriology sample should only be taken when antibiotics are indicated.**
- **Sampling should not be undertaken where there is no clinical infection.**
- **Do not do test of cure samples.**

Diagnosing Infection

The **Ropper Lothian Ladder** is used to diagnose infection. A copy of the full guideline is attached at the end of this document. It can also be downloaded from the intranet (tissue viability -> guidelines -> infected wounds) or by following the following link:

<http://intranet.lothian.scot.nhs.uk/NHSLothian/Healthcare/A-Z/TissueViability/Guidelines/Pages/InfectedWounds.aspx>

Stage 1: Few subtle signs of infection: healing progressing normally.

No swabs needed.

Stage 2: Increasing signs of infection (critical colonisation): healing not progressing

Consider swab if not improving after two weeks of topical treatment.

Stage 3: Overt signs of local infection: evidence of surrounding tissue involvement, wound deteriorating. **Collect swab and arrange review by a doctor or nurse practitioner so that antibiotics can be started if clinically appropriate.**

Stage 4: Overt signs of local infection and signs of systemic infection: may lead to sepsis if not treated. **Collect swab and arrange review by a doctor or nurse practitioner so that antibiotics can be started if clinically appropriate and collect swab.**

Empiric treatment of infected wounds

For stage 3 or 4 a blue top swab should be taken **before** starting antibiotic treatment. Systemic antibiotics are indicated in the presence of cellulitis or clinical infection.

First line treatment: oral **flucloxacillin 500mg**, four times a day, for 7 days.
(**clarithromycin 500mg bd** if penicillin-hypersensitive).

Review after **3 days** in light of the microbiology results.

Refer to Lothian Joint Formulary (LJF) for MRSA treatment recommendations.

For guidance on use of dressings and topical agents see LJF. Please note that the use of topical fusidic acid is not recommended for chronic wounds.

Do not send a further swab if the patient has responded to antibiotics.

Interpreting the result of wound swabs

Group A β -haemolytic Streptococcus or **Streptococcus pyogenes** can be associated with significant infection and delay healing and should usually be treated. For example, if it is found in a stage 2 infection that is not responding to topical therapy consider systemic antibiotic treatment. The significance of other organisms depends on the presence of the clinical criteria above.

Bacterial colonisation of wounds is not considered to adversely affect healing.

Pseudomonas, Enterococcus and coliforms are usually colonising flora.

Staph aureus, Groups B, C or G β -haemolytic Streptococci or anaerobes can be colonising flora or can cause infections. Treat only if clinically indicated.

References

- <http://www.hpa.org.uk/Topics/InfectiousDiseases/InfectionsAZ/PrimaryCareGuidance/> Accessed 20th May 2013
- **Ten top tips for taking a wound swab:** Wounds International, Vol 1; Issue 3 › Practice development › **Ten top tips for taking a wound swab** 25/05/10 | Assessment and diagnosis, Infection | Rose Cooper

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The inclusion of antibiotic susceptibilities on the report does not necessarily mean that an organism is significant or that it requires antibiotic treatment.

Tips for collecting a swab in a chronic wound

Blue top swabs should be used.

1. **Explain** to the patient why you are taking a swab and how this will affect their treatment.
2. **Clean** the wound. Remove any contaminating materials such as slough, necrotic tissue, dried exudate and dressing residue by **cleansing the wound with sterile water, sterile saline or debridement**.
3. **If the wound is dry, then the swab tip should be moistened** with **sterile saline** to increase the chances of recovering organisms. Swabs with a transport medium that incorporates charcoal enhance the survival of fastidious organisms.
4. Care should be taken to ensure that the swab **only comes into contact with the wound surface**.
5. Move the swab **in a zig-zag motion** across the wound surface, while **rotating** it between the fingers. Downward pressure to release fluid from the wound surface has been advocated but may be painful for the patient.
6. A **representative area** of the wound should be sampled. If the wound is large, **at least 1cm² should be sampled** and material from both the **wound bed and wound margin** should be collected. If **pus** is present, the clinician should ensure that a sample is sent to the laboratory.
7. **Immediately** following collection, the swab should be **returned to its container** (transport medium) and **accurately labeled** and a lab form completed. It is important to **provide information** to the laboratory staff that may be relevant, such as **underlying co-morbidities, ongoing treatment and wound location**.
8. The sending of a swab and its site should be documented **in the patient's records**.
9. Swabs must be transferred to the laboratory **as quickly as possible**.

The Ropper Lothian Ladder

Guidelines for identifying infected wounds and when to start and stop using topical antimicrobial dressings

Each stage builds on the previous signs noted

Stage 4

Overt signs of local infection and signs of systemic infection: May lead to sepsis if not treated

- Spreading cellulitis
 - Pus / abscess
- Patient systemically unwell e.g. confusion
 - Pyrexia
- Raised white cell count / CRP
 - Malodour of wound

Stage 4 - Treatment

- If systemic signs **only**, consider other source of infection
- Swab wound using standardised method
- Consider taking blood cultures prior to starting antibiotics
- Start antibiotics* per local protocol (LJF or UHD guidelines) while awaiting culture results
- Consider combination therapy with topical antimicrobials** e.g. in PVD, diabetes
- **Monitor wound progress, review wound at 2 weeks and stop topical antimicrobials when signs of infection cease**
- Once topical antimicrobial stopped continue with correct dressing regime for wound/tissue type (LJF guidelines)

Stage 3

Overt signs of local infection: Evidence of surrounding tissue involvement, wound deteriorating

- Localised cellulitis
- Discoloured or bleeding granulation tissue
 - Pain in or around wound
- Exudate: thick, haemopurulent or purulent and/or high volumes
 - Localised oedema
 - Malodour

Stage 3 - Treatment

- Swab wound using standardised method
- Drain any local collections of pus/fluid
- Consider combination therapy with antibiotics* per local protocol (LJF or UHD guidelines) and topical antimicrobials**
- **Monitor wound progress, review wound at 2 weeks and stop topical antimicrobials when signs of infection cease**
- Once topical antimicrobial stopped continue with correct dressing regime for wound/tissue type (LJF guidelines)
- If no progress after two weeks and/or signs of systemic infection move to Stage 4

Stage 2

INCREASING signs of infection (critical colonisation): Healing not progressing normally

- Exudate - high volumes
 - Malodour
- Pain in or around wound
- Discolouration of granulation tissue
 - Slough / necrosis

Stage 2 - Treatment

- Select topical antimicrobial**
- **Monitor wound progress, review wound 1-2 weeks**
- **If no improvement:**
 - Consider swabbing wound using standardised method
 - Consider alternative topical antimicrobial**
- **If improved stop topical antimicrobials when signs of infection cease**
- Once topical antimicrobial stopped continue with correct dressing regime for wound/tissue type (LJF guidelines)
- If no progress after two weeks and/or increasing signs of local infection move to Stage 3

Stage 1

Few subtle signs: Healing progressing normally

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

Stage 1 - Treatment

- Promote moist wound healing using correct dressing regime for wound/tissue type & exudate level (LJF guidelines)
- **Monitor wound progress, if no improvement in 1-2 weeks reassess wound and dressing choice**
- **Check underlying aetiology of wound, if required refer to appropriate specialist** e.g. vascular, diabetic podiatry, tissue viability, lymphoedema etc.
- If no progress after a further 1-2 weeks and/or increasing signs of infection/critical colonisation move to Stage 2

Start

This guide should be used along with clinical judgement in complex patients; in particular patients with diabetic wounds (refer to diabetic podiatry team), vascular problems and immunocompromised patients may require antimicrobials for prophylaxis as well as treatment. *Systemic Antibiotics - follow NHS Lothian Antibiotic Policy. **Topical Antimicrobial - refer to Lothian Joint Formulary (LJF). Topical antimicrobials can include honey, iodine, silver, PHMB, DACC and enzymatic products. Not all of these are formulary products, see LJF and the reverse for guidance on their use. Contact TVN team for more info if required.

References:

European Wound Management Association (2005) Position Document: *Identifying criteria for wound infection*. MEP, London
 European Wound Management Association (2006) Position Document: *Management of wound infection*. MEP, London
 Best Practice Statement: *Use of topical antiseptic/antimicrobial agents in wound management*, Wounds UK Aberdeen (2010)

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RR/JT/TVNS

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