Maggot Debridement Therapy: Is It Faster Than Using Hydrogels?

Clinical Issue

Treating leg ulcers is often a challenge for nurses. For the wound to fully heal it must be debrided, which can often take a long time (Mudge, Price, Neal & Harding, 2014). Debridement involves removing sloughy tissue within a wound. This reduces the amount of bacteria in the wound and allows viable tissue to grow, thus it is essential for wound healing (Mudge et al, 2014).
The standard treatment for debriding wounds is to use a hydrogel, however using maggots to debride wounds is becoming a popular method (Dumville et al, 2009). This prompts the question "Does maggot debridement therapy lead to faster debridement and healing of leg ulcers compared with using hydrogel?"

Maggots in a wound (Jones, Green & Lillie, 2011)

What is Maggot Debridement Therapy?

Maggot debridement therapy involves releasing live sterile maggots (*Lucila sericata*) into an open wound that contains sloughy tissue. The wound is then covered by a secondary dressing and after 2-3 days the wound is flushed, and cleaned. A reapplication of maggots may be indicated if slough still remains (Shi & Shofler). There are two ways maggots debride wounds.

1. Mechanical: the movement of the maggots, combined with their mouth hooks, loosen the sloughy tissue so it can be easily flushed away (Shi & Shofler, 2014).
2. Enzymatic: maggots secrete enzymes which liquefies the sloughy tissue and allows the maggots to ingest it (Shi & Shofler, 2014).

Maggot debridement therapy is commonly used in the United Kingdom after other methods have failed, however it is not as commonly used in other countries, including New Zealand (Shi & Shofler, 2014).

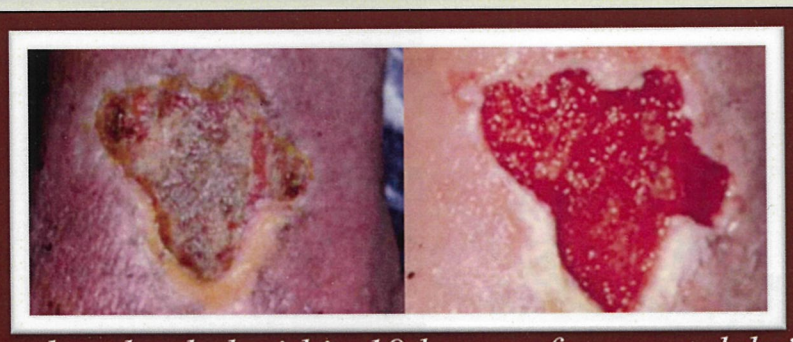
Findings

Two randomised controlled studies have been conducted to determine whether maggot debridement therapy is a faster debridement method than hydrogel in regards to leg ulcers. The research also discussed the limitations and benefits of maggot debridement therapy. These evidenced-based studies have shown that…

- The average time until complete debridement was significantly faster in maggot debrided ulcers (14 days) than in hydrogel debrided ulcers (72 days) (Mudge et al, 2014; Dumville et al, 2009).
- The average time until the wound was completely healed was only slightly shorter in maggot debrided ulcers (236 days) than in hydrogel debrided ulcers (245 days) (Dumville et al, 2009).
- Using maggot debridement therapy was reported as being more painful or uncomfortable than using hydrogel debridement (Mudge et al, 2014).
- Maggot debridement therapy is significantly cheaper than hydrogel treatment when debriding wounds due to decreased treatment time (Mudge et al, 2014; Shi & Shofler, 2014).

Recommendations

- Using maggot debridement therapy in leg ulcers with persistent slough, particularly if conventional methods have failed. Maggots debride wounds effectively and it is faster than hydrogel, and thus should be used for persistent slough.
- Further research into why healing time is similar with maggot debridement therapy and hydrogel even though debridement time is significantly different. Knowledge of why this is may result in being able to reduce healing time using maggot debridement therapy.



This leg ulcer healed within 19 hours of maggot debridement therapy (Gilead, Mumcuoglu & Ingber, 2012)

References

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Rational For Poster Presentation

I have chosen to present my clinical issue in the form of a poster. The issue in question is "Does maggot debridement therapy lead to faster debridement and healing of leg ulcers compared with using hydrogel?" After careful consideration I decided my topic would be best suited to a poster due to the opportunity to have visual information, as well as written. Posters must have visual aspects and I believe that photographs of maggot debridement therapy will help convey the findings of the research conducted. Posters are able to attract a person's eye if they are visibly appealing, which then compels the person to read the information on the poster (Whitehead & Schneider, 2013). They are able to be displayed anywhere, which means that people walking past can stop and have a read as they walk past (Whitehead & Schneider, 2013).

The written information of a poster must be informative but concise so that all the important information is able to fit on the poster without it being cluttered (Whitehead & Schneider, 2013). I believe that writing things in a concise manner is a strong point of mine and so I am able to present a poster that I consider to be well done.

PICOT Model

P	Patient	Patients with leg ulcers of which at least 25% is covered in sloughy tissue.
I	Intervention	Using maggot debridement therapy to completely debride the wound in order to achieve complete wound healing.
C	Comparison	How rapidly does using maggot debridement therapy to completely debride the wound in order to achieve complete wound healing in comparison with using a hydrogel for the same purpose.
O	Outcome	Debridement of the sloughy and necrotic tissue in the leg ulcers and ultimately resulting in the wound becoming completely healed.
T	Timeframe	Maggots completely debride the wound for complete wound healing faster than hydrogel.

(Whitehead, 2013)

Final research question: "Does maggot debridement therapy lead to faster debridement and healing of leg ulcers compared with using hydrogel?"

References

Whitehead, D. (2013). Identifying research ideas, questions, statements and hypotheses. In Z. Schneider, D. Whitehead, G. LoBiondo-Wood & J. Haber (Eds.), *Nursing and midwifery research: methods and appraisal for evidence-based practice* (4th ed.). Sydney, NSW: Elsevier Australia.

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