Maggot Therapy

How clinically usefully is maggot debridement therapy in treating foot and leg ulcers in patients with type 2 diabetes?

Practice issue:

The purpose of my review is to consider maggot therapy as an effective treatment for the debridement of leg and foot ulcers in patients with type 2 diabetes. If an ulcer remains untreated, amputation is a strong possibility which entails a considerable expense to the healthcare system, and disabling lifestyle changes for the patient following surgery and rehabilitation. Common conventional treatment of leg and foot ulcers is often costly, time consuming and painful. An alternative treatment, maggot debridement therapy, is used extensively in the United Kingdom and America (Bowling, Gautam, Salgami, McCardle & Boulton, 2008), but remains a "potentially unused modality in wound care markets" (Shi & Shofler, 2014, p.1). The process involves the application of live maggots to the wound which provides three key processes: debridement, disinfectant and growth promoting activity (Bowling et al., 2008). Maggot therapy could effectively contribute to the successful management and treatment of wound care, which is an important consideration when taking into account New Zealand's growing rate of type 2 diabetes and associated complications.

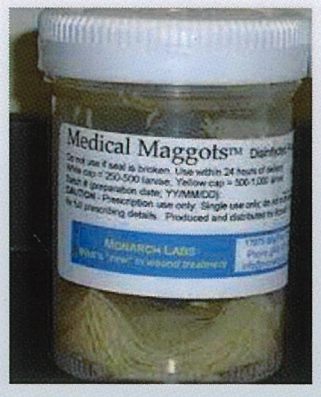
Key findings and discussion:

-Shi and Shofler (2014) suggest traditional debridement methods can cause trauma to the wound tissue, which may extend beyond the necessary boundary. Maggots feed only on dead tissue, leaving healthy skin unharmed.

-The longer the ulcer remains necrotic, the worse it gets thus a longer time required for healing (Wood & Hughes, 2013). If treatment is not sought, further complications will occur. Sherman (2014) states that each maggot is capable of removing 25mg of necrotic material from the wound in 24 hours. This is in support of evidence from Tian et, al (2013), that if the process of debridement is accelerated, healing may be achieved more quickly.

-Maggot therapy is cost effective when comparing the costs with amputation (as a result of untreated or failed treatment of ulcers) or current conventional treatments. Shi and Shofler (2014) confirm based on their studies, that the process of maggot debridement is less expensive than other medical and surgical wound care treatments and a shorter stay in hospital is required.

-A significant barrier to using maggot therapy is apparent throughout the literature, which involves the attitudes towards this treatment from patients and health professionals providing wound care management. This is often referred to as "the yuk factor" (Paul et al., 2009).



Recommendations:

-Promote wider availability and use of maggot debridement therapy to match the availability of conventional methods is a key strategy that could help achieve this goal. This would be made possible by increasing the availability of training for health professionals to use maggot debridement therapy in New Zealand hospitals.

-Development of strategies that will help patients to overcome the yuk factor, and change current attitudes that may be preventing patients from considering maggot debridement therapy as a treatment. Once the health professional has received proper information and education around the therapy, they can then offer it to their patients and can provide comprehensive and up to date information about the risks and benefits it entails.

References:

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Paul, A., Ahmad, N., Lee, H., Ariff, A., Saranum, M., Naicker, A., & Osman, Z. (2009). Maggot debridement therapy with Lucilia cuprina: a comparison with conventional debridement in diabetic foot ulcers. *International Wound Journal*, 6, 39-46.

Sherman, R. A. (2014). Mechanisms of Maggot-Induced Wound Healing: What Do We Know, and Where Do We Go from Here? *Evidence-Based Complementary & Alternative Medicine (Ecam)*, 1-13. doi:10.1155/2014/592419

Shi, E., & Shofler, D. (2014). Maggot debridement therapy: a systematic review. *British Journal Of Community Nursing*, *19*, 6-13. doi:10.12968/bjcn.2014.19.

Tian, X., Liang, X. M., Song, G., Zhao, Y., & Yang, X. L. (2013). Maggot debridement therapy for the treatment of diabetic foot ulcers: a meta-analysis. *Journal Of Wound Care*, *22*, 462-469.

Wood, L., & Hughes, M. (2013). Reviewing the effectiveness of larval therapy. *Journal Of Community Nursing*, *27*, 11-14.

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PECOT category	Information relating to question	Explanation
Patient	Patients who suffer from leg or foot ulcers as a complication of having type 2 diabetes.	Type 2 diabetes numbers are on the rise in New Zealand. Patients with type 2 diabetes have a 12-25% lifetime risk of developing foot ulceration.
Intervention	Using maggot therapy for the debridement of diabetic leg and foot ulcers.	Maggot therapy is a promising treatment, used minimally in New Zealand in comparison with conventional ulcer treatment.
Comparison/control	Ulcers that are either untreated, or treated by conventional methods.	Common conventional treatments can be ineffective and expensive, and leaving an ulcer untreated may result in amputation.
Outcome	To discover whether maggot therapy is effective in the treatment of diabetic ulcers.	I want to examine the effectiveness of alternative methods of treatment for diabetic ulcers that are both time and cost effective.
Time	N/A	N/A

Whitehead, D. (2013) Searching and reviewing the literature. In Z. Schneider & D. Whitehead (4th ed), *Nursing and Midwifery Research* (p.44). Australia: Mosby Elsvier

Rationale

I believe that maggot debridement therapy is a very compelling subject that should appeal to both health care professionals and the general public as an effective method for the management and treatment of diabetic leg and foot ulcers. This is a critical issue when considering New Zealand's growing rate of type 2 diabetes, and is therefore one which is relevant to us all. I chose to present my evidence-based literature in the form of a poster. This is because my practice issue requires both further research and demonstrably effective methods for overcoming the "yuk" factor before it could be considered as an effective wound care treatment in New Zealand hospitals. This visual presentation allows the reader to obtain knowledge of maggot debridement therapy in the surgical context, while addressing common barriers that are currently hindering this from becoming an accepted form of wound treatment. A poster presentation is an effective way to share information efficiently with a large group of people, and seeks to inspire interest in alternative methods for wound care management. This in turn provides the basis for the development of strategies aimed at overcoming the barriers identified above.