

The Diabetes Foot Care Facebook Group Study

By Helen Ngozichukwuka Obilor MSc (Nursing) RN PhD Candidate; Kevin Woo, RN PhD

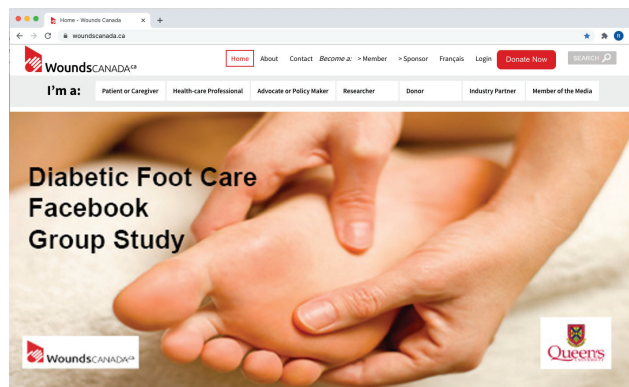
Globally, diabetic foot ulcers (DFUs) are a serious diabetes complication linked to excess disability and morbidity. To prevent foot complications, people with diabetes benefit from lifelong behavioural modifications, including meticulous foot care, dietary changes, smoking cessation and stringent blood glucose control.¹ However, adherence to preventative foot self-care recommendations is suboptimal.² Continuous patient education is critical to improving adherence.³ Available patient education programs often require patients to attend one to two in-person community- or hospital-based sessions with health-care professionals, but emerging evidence has shown its effectiveness to be transitory and tenuous.⁴

Alternative methods of patient education that could sustain lifelong self-care adherence are urgently needed to improve health outcomes. Social media could potentially serve as the platform for ongoing individual learning and motivation. Despite the limited number of studies examining the effect of social-media-based interventions on chronic disease self-management, the results indicate a positive impact.⁵ Specific to diabetes foot care, previous studies have shown that social

media sites such as Facebook and YouTube offer helpful patient information, but their impact on patients' foot health outcomes is unknown.⁶⁻⁷

In collaboration with Wounds Canada, we, the authors, are conducting a research study to explore the feasibility of using social media to engage individuals with diabetes in preventing foot ulcers.

The research adopts Brewin and Bradley's partially randomized preference trial design, which involves the combination of a) randomization of willing participants to either the experimental or control group and b) the option for participants to choose their preferred study group.



Participants in the experimental group will be invited to join a virtual community through a Facebook Group platform. These participants will receive continuous education based on components of the Wounds Canada Diabetes, Healthy Feet and You Program, using a variety of text, videos, photos and weblinks to promote user engagement and provide support. A trained peer leader (a person with diabetes) will co-moderate the Facebook Group alongside the principal investigator (Obilor) to help participants problem solve and identify realistic goals. The control group participants will not be enrolled in the Facebook

Group but will continue with their routine care. The study outcomes are mean changes in participants' baseline and three-month post-intervention self-reported foot self-care behaviour, foot health status (measured using the Foot Health Status Questionnaire, items 9 and 13), confidence and quality of life (assessed using MOS-SF 12). Also, qualitative data collected through a telephone interview and thematic analysis will explore the participants' perspective on how the Facebook Group has helped them with self-management.

The study findings will assist researchers in gaining insight into the feasibility of Facebook Group support in preventing foot ulcers and possibly inform recommendations for its integration into diabetes self-management programs.

We . . . solicit all health-care providers' support to share information about our study with their patients and request their participation.

We are currently recruiting participants and, therefore, solicit all health-care providers' support to share information about our study with their patients and request their participation.

To be eligible, patients must (a) be age 18 years or over with the diagnosis of diabetes, (b) reside in Canada, (c) own or be willing to create a Facebook account, (d) have access to the Internet, computer/smartphone and email; and (e) speak and write in the English language.

The privacy of participants is of utmost priority. The Facebook Group is private and closely monitored, and only approved members can see who is in the group and what they post.

Ethics clearance is approved by Queen's University Health Sciences and the Affiliated Teaching Hospitals Research Ethics Board.

To contact us regarding the study, please call Helen Obilor at 343-333-8226 or email 15hno@queensu.ca. More information on the study can be found at www.woundscanada.ca/patient-or-caregiver/diabetic-footcare-facebook-group-study. ■

References

1. Hingorani A, LaMuraglia GM, Henke P, Meissner MH, Loretz L, Zinszer KM, et al. The management of diabetic foot: A clinical practice guideline by the Society for Vascular Surgery in collaboration with the American Podiatric Medical Association and the Society for Vascular Medicine. *J Vasc Surg*. 2016;63(2 Suppl):3s–21s.
2. Matricciani L, Jones S. Who cares about foot care? Barriers and enablers of foot self-care practices among non-institutionalized older adults diagnosed with diabetes: An integrative review. *Diabetes Educ*. 2014;41(1):106–17.
3. Schaper NC, van Netten JJ, Apelqvist J, Bus SA, Hinchliffe RJ, Lipsky BA. IWGDF Practical Guidelines on the Prevention and Management of Diabetic Foot Disease. The International Working Group on the Diabetic Foot; 2019. Retrieved from: <https://iwgdfguidelines.org/wp-content/uploads/2019/05/01-IWGDF-practical-guidelines-2019.pdf>.
4. Dorresteijn JAN, Kriegsman DMW, Assendelft WJJ, Valk GD. Patient education for preventing diabetic foot ulceration. *Cochrane Database Syst Rev*. 2014;12(CD001488).
5. Merolli M, Gray K, Martin-Sanchez F. Health outcomes and related effects of using social media in chronic disease management: A literature review and analysis of affordances. *J Biomed Inform*. 2013;46(6):957–69.
6. Abedin T, Ahmed S, Al Mamun M, Ahmed SW, Newaz S, Rumana N, et al. YouTube as a source of useful information on diabetes foot care. *Diabetes Res Clin Pract*. 2015;110(1):e1–e4.
7. Abedin T, Al Mamun M, Lasker MAA, Ahmed SW, Shommu N, Rumana N, et al. Social media as a platform for information about diabetes foot care: A study of Facebook groups. *Can J Diabetes*. 2017;41(1):97–101.

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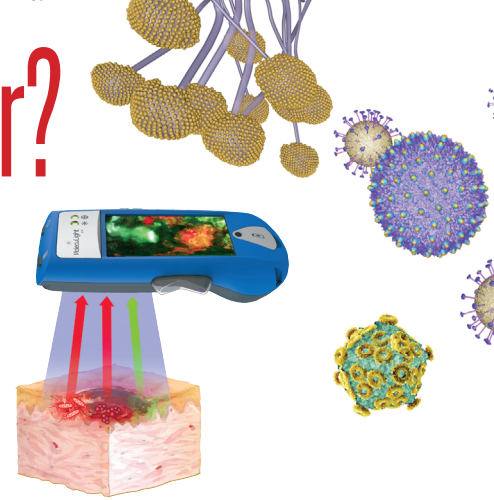
Kevin Woo is an associate professor at Queen's University, School of Nursing, School of Rehabilitation Therapy in Kingston, Ontario. He is the North American regional director and chair of the research committee for the International Skin Tear Advisory Panel (ISTAP). He is the web editor for the *Advances in Skin and Wound Care* website. He maintains his clinical expertise and functions as an advanced wound consultant.

How effective is your wound cleanser?

An evaluation using bacterial fluorescence imaging



By Rosemary Hill BSN CWOCN WCCC (C)



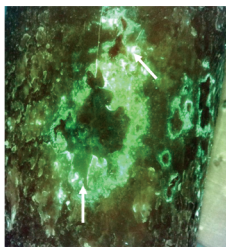
INTRODUCTION

- Wound cleansing to remove surface bacteria is an essential component of wound bed preparation.¹
- It is challenging for clinicians to objectively assess at the point of care the effectiveness of a wound cleanser in removing the surface bacteria.
- Most cleansers are cytotoxic, therefore the provincial health authority of British Columbia, Canada mandated that only normal saline be used.²
- Two novel, non cytotoxic and tissue compatible wound cleansers were identified by the provincial authority to improve the removal of surface bacteria: a hypochlorous acid solution and a modified sodium hypochlorite solution.
- This study aimed to objectively evaluate and compare the effectiveness of the two novel wound cleansers to substantiate selecting a specific cleanser and switching from normal saline as best practice.

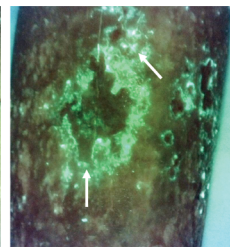
Fluorescence Images



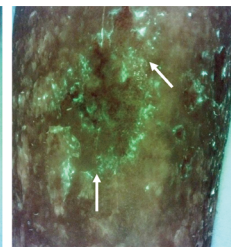
Standard Image



Post Saline
Cleanse



Post Hypochlorous
Acid Soak



Post Modified Sodium
Hypochlorite Cleanse
(Anasept® Antimicrobial
Skin & Wound Cleanser)

METHODS

Bacterial Fluorescence Imaging (MolecuLight i:X)

- When excited by 405 nm violet light, tissues fluoresce green while bacteria fluoresce red (porphyrin-producers, e.g. *Staphylococcus aureus*) or cyan (pyoverdine-producing *Pseudomonas aeruginosa*)
- This enables real time, point of care detection and localization of bacteria at loads of moderate to heavy within and around wounds³⁻⁵

COMPARISON STUDY

- Wounds (n=15) were cleansed with normal saline, as per best practice, after which a fluorescence image was acquired to visualize any concerning levels of bacteria remaining within and around the wound.
- Wounds were next soaked with the hypochlorous acid for a minimum of five minutes (per manufacturer guidelines), scrubbed and then re-imaged.
- Wounds were lastly sprayed with sodium hypochlorite solution and immediately scrubbed and re-imaged.

PRODUCT USED IN EVALUATIONS:

- 1) Saline - 0.9% Sodium Chloride (Isotonic) Solution
- 2) Hypochlorous acid
- 3) Modified sodium hypochlorite:

Anasept® Antimicrobial Skin & Wound Cleanser (Anasept® is a registered trademark of Anacapa Technologies, Inc.)



CONCLUSIONS

- Saline cleansing, according to best practice, left behind widespread bioburden in all wounds.
- Heavy bioburden in and around wounds can be identified from the fluorescence images and fluorescence images provide an objective method of evaluating the effectiveness of cleansing and performing targeted cleansing at the point of care.
- The evaluation found that sodium hypochlorite solution was superior to both normal saline and the competitor hypochlorous solution in removing *Pseudomonas* and other bacteria.
- Based on the results, the provincial authority now recommend that wounds exhibiting heavy bioburden be cleansed with sodium hypochlorite solution.



800.489.2591 anacapa-tech.net

Anasept® is a registered trademark of Anacapa Technologies, Inc

REFERENCES

1. Pilcher M. Wound cleansing: a key player in the implementation of the TIME paradigm. J Wound Care (2016)
2. British Columbia Provincial Nursing Skin & Wound Committee Procedure: Wound Cleansing (2017)
3. DaCosta RS et al. Point of Care Auto fluorescence Imaging for Real Time Sampling and Treatment Guidance of Bioburden in Chronic Wounds: First in Human Results, PLoS ONE 10(3), 2015.

4. Wu YC et al. Handheld fluorescence imaging device detects subclinical wound infection in an asymptomatic patient with chronic diabetic foot ulcer: a case report. International Wound Journal, 2015.
 5. Ottolino Perry et al. Improved detection of wound bacteria using autofluorescence image guided wound sampling in diabetic foot ulcers. International Wound Journal (In revisions).
- The MolecuLight i:X is manufactured by MolecuLight, Inc. 425 University Avenue, Suite 700 Toronto, ON, M5G 1T6 Canada