Point of Care Identification of *Pseudomonas aeruginosa* with the MolecuLight *i:X*® Led to Targeted Treatment

Practitioner

Rosemary Hill, BSN, CWOCN, CETN(C), with over 12 years of wound care experience, oversees wound care for inpatients and outpatients at Lions Gate Hospital, Vancouver Coastal Health, located in North Vancouver, Canada. Rosemary is currently President of the Canadian Association for Enterostomal Therapy (CAET).

Patient Condition

74-year-old female with a venous leg ulcer for longer then 5 months and confirmed hemangioma. The patient had previously received multiple courses of oral antibiotics, with minimal effect on wound progression, prior to her referral to the wound specialty team at Lions Gate Hospital, Vancouver Coastal Health for stalled wound healing.

Pseudomonas aeruginosa is one of the most common pathogens found in chronic leg ulcers, frequently leading to a stall in wound healing[1-2]. Its unique intrinsic and acquired antibiotic resistances make early identification and the selection of *Pseudomonas*-specific treatment regimes critical in wound care[1-2]. *P. aeruginosa* sometimes presents with unique clinical symptoms, including a malodorous, greenish crust and a greenish tinge on removed dressings[3], but there are cases when no specific signs and symptoms are observed[3]. This bacterial species has unique fluorescent properties and is indicated by a cyan color on MolecuLight ***i:X*** fluorescence images[4], enabling immediate species identification.

This patient's stalled wound exhibited no clinical signs and symptoms specific to *Pseudomonas aeruginosa* colonization, yet real-time visualization of cyan fluorescence on MolecuLight ***i:X*** images (Figure 2) strongly suggested *P. aeruginosa* (>10^4 CFU/g) [4]. Obtaining this information at the point of care led the clinician to immediately select an antimicrobial dressing indicated for use against *P. aeruginosa*. Swabs taken from regions of cyan fluorescence under MolecuLight ***i:X*** fluorescence guidance later confirmed moderate growth of *P. aeruginosa*.

Figure 1: Standard Image. Image taken under standard lighting conditions.

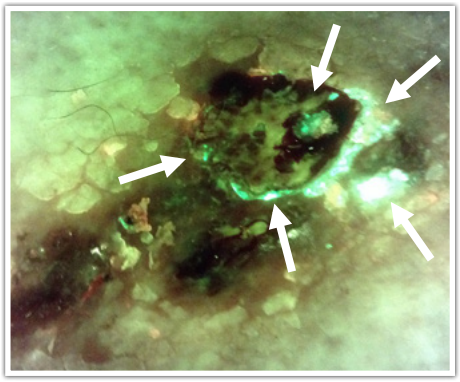

Figure 2: Fluorescence Image. Arrows indicate regions of cyan fluorescence. Swabs of cyan regions later confirmed to be moderate growth of *P. aeruginosa*.

At the next visit, cyan fluorescence was no longer detected, supporting the effectiveness of the chosen antimicrobial treatment. Systemic antibiotics were not re-prescribed. With this effective eradication of *P. aeruginosa* contamination, the wound began to heal within three weeks.

MolecuLight®

CASE STUDY Vancouver Coastal Health - North Vancouver, BC, Canada

MolecuLight *i:X*®

The MolecuLight ***i:X*** allows clinicians to quickly, safely and easily identify wounds with bacteria[4-7] (at loads of $>10^4$ CFU/g, in combination with CSS) and measure wounds[5,7] at the point of care to provide them with valuable information to inform treatment and monitor progress[6,7].

Testimonial

"I would not have suspected *Pseudomonas* on this wound. Both the Infectious Disease physician and myself were surprised when the ***i:X*** images showed clear presence of the cyan color, which influenced my clinical practice."

— Rosemary Hill, BSN, CWOCN, CETN(C)

Cyan/white color in this image indicates bacteria ($>10^4$ CFU/g)[4,5].

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The MolecuLight® ***i:X*** Imaging Device is approved by Health Canada for sale in Canada and has CE marking for sale in the European Union. The MolecuLight® ***i:X*** Imaging Device has received FDA clearance.