Incorporating clues from imaged wound dressing in high bacterial loads & infection treatment planning

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Poster Download

- Presence of >10^4 CFU/g bacteria is linked to healing arrest and sets the stage for a serious infection.[1-3]
- The MolecuLight® fluorescence (FL) imaging device identifies high bacterial loads in wounds at the point-of-care.[4]
- Bacterial presence on the non-biological materials that interact with a wound can give additional information to more accurately guide treatment.

MolecuLight Device

Fluorescence Signals:

Red: gram +/-, aerobes, anerobes[5]

Cyan: *Pseudomonas*[6]

Yellow: Subsurface bacteria

Methods:

- Consecutive imaging of 461 wounds.
- Noted wound information including the use/findings on non-biologicals in contact with the wound.
- Non-biological elements included:

Dressings & wicks

Drains & tubing

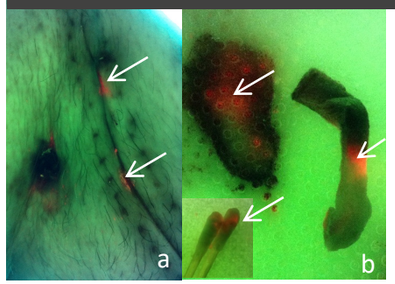
Orthotics & socks

Hardware

Q-tips ("C-Swab probe")

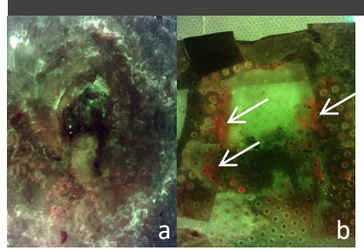
Aim of the study: Determine the therapeutic changes that derived from the fluorescence imaging findings on non-biologicals in relationship (or not) with fluorescence findings on the wound and peri wound.

Trusting findings on non-biologicals to guide treatment



Post femoral popliteal bypass non-healing groin wound negative for FL (a), however, a wick inside displays red FL (seen shimmering through the incision and later when removed (b). FL is seen in the dressing and a Q-tip used to probe the wound (b). Treatment was escalated by irrigating with antibacterial solution, applying topical antibiotic and using an antimicrobial dressing, healing was complete. (c)

Using a dressings as guide

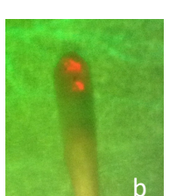


VLU with a CTP application was treated with standard care. On follow-up negative for FL (a), but dressing exhibited a red FL signal (arrows) (b). Cleansing, topical antibiotics and antimicrobial dressing were continued based on this and healing was achieved shortly after.

Our "C-Swab (Q-tip) probing test"

Used to uncover bacterial presence in areas located beyond the surface. The Q-tip acts as a probe, collecting material from deep inside a tunneled, sinusoid, cavernous wound and then is imaged for FL.

Frequently we are faced with a cavernous wound with a small opening. Appears innocuous on standard (a1) and FL-imaging (a2), but this technique allows exposure of deep bacterial presence. See red FL on swab's tip (b).



461 consecutive wounds

332 wounds (72%) negative FL

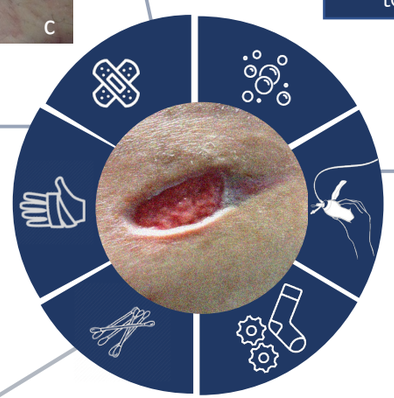
129 wounds (28%) positive FL

102 wounds (79%) therapy change due to FL findings

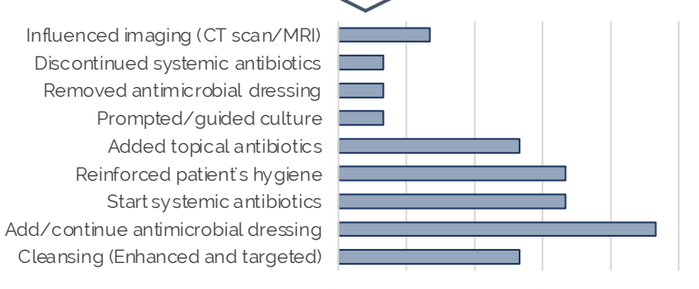
164 therapy changes in 102 wounds occurred overall

72/164 based on non-biologicals + wounds FL- finding

30/72 based only on non-biologicals findings



- ✓ **80% of our therapeutic decisions** were helped by positive FL-imaging findings in the wound, peri wound and/or a non-biological.
- ✓ **Imaging findings in a non-biological element was considered in over half of those clinical decisions.**
- ✓ Considering the bacterial loads found in elements that are in contact with the wound derived in **more successful and proactive treatments** in our experience.
- ✓ **Visually demonstrating bacterial presence to patients helped improve their own self-care and treatment adherence**.



INTERVENTIONS INFLUENCED BY FL-IMAGING FINDINGS ON NON-BIOLOGICAL ELEMENTS ONLY (%)

References