Monitoring the Effectiveness of an Antibiotic Against MRSA using the MolecuLight i:X®

Methicillin resistant *Staphylococcus aureus* (MRSA) infections are difficult to treat with standard types of antibiotics and are therefore more dangerous and more costly to the healthcare system.

**Clinical Synopsis:**
Although Negative Pressure Wound Therapy (NPWT) had significantly reduced wound size in this non-healing venous leg ulcer, all treatments targeting this MRSA infection had been unsuccessful. This prompted the prescription of a newly available oral antibiotic. After one week of treatment, MolecuLight i:X fluorescence images revealed a significant decrease in red fluorescence (indicating bacterial loads of >10^4 CFU/g), providing feedback on the effectiveness of the antibiotic.

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**Practitioner**
Rose Raizman RN-EC, MSc, with over 19 years of experience, leads the Save Our Skin (SOS) team at Scarborough & Rouge Hospital located in Toronto, Canada, to combat pressure ulcers of hospital inpatients. She also oversees the wound care clinic for inpatients and outpatients.

**Patient Condition**
50 year old male patient with a venous leg ulcer (>1 year) on his left medial ankle. Wound presented with heavy drainage and a MRSA infection that had persisted over many months of care, despite numerous antibiotics and antimicrobials. The patient’s wound received regular cleaning, debridement and treatment with negative pressure wound therapy.

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**Figure 1:** Standard Image.

**Figure 2:** Fluorescence Image. The red color (white arrows) in this fluorescence image suggests the presence of bacterial loads >10^4 CFU/g.

**Figure 3:** Standard image after one week of treatment.

**Figure 4:** Fluorescence image after one week of treatment with a new antibiotic. The noticeable decrease in red color suggests a significant decrease in bacterial loads to <10^4 CFU/g.
“I had tried numerous treatments targeting this patient’s MRSA, none of which were effective. The MolecuLight images demonstrated a reduction in bacteria after one week of antibiotic treatment.”

— Rose Raizman RN-EC, MSc

References: