ECMO Care Beyond Decannulation

A Nurse Driven Wound Care Protocol

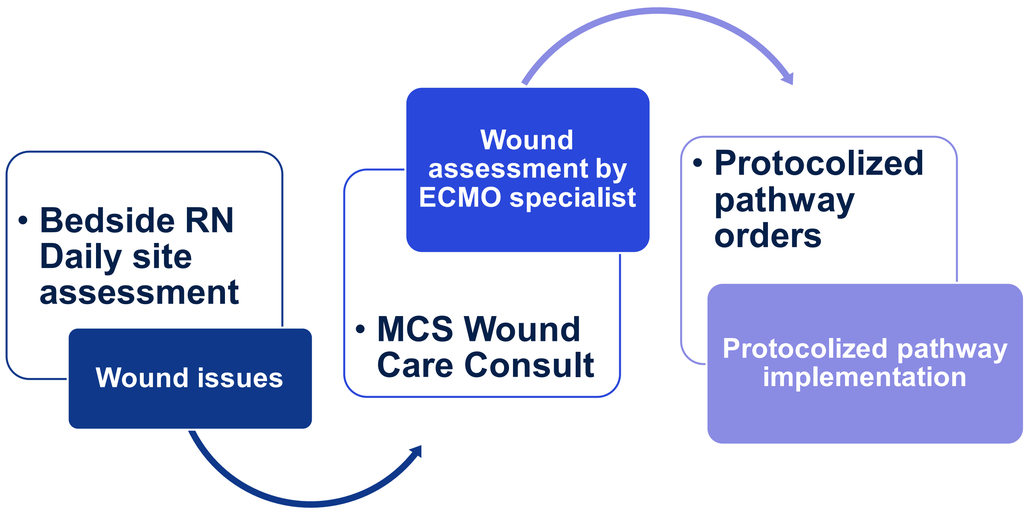
Audrey Basic[1], Emily Smith[1], Jonathon Holte[2], Sylvie Baudart[3], Jason Smith[4]
[1] Intensive Cardiac Care, [2] Institute for Nursing Excellence,[3] Mechanical Circulatory Support, [4] Department of Cardiothoracic Surgery
University of California at San Francisco

Background

ECMO (Extracorporeal membrane oxygenation) utilization has dramatically increased in recent years. As patients' survival improves, large number of patients survive beyond decannulation yet the many sequelae of ECMO therapy remain underassessed and undertreated. To date, there are no recommendations for management of cannulation sites wounds post decannulation. These sites are at risk for infection, lymphorrhagia, delayed healing, and necrosis and are often not assessed by clinicians who specialize in ECMO care. Our goal was to promote earlier intervention to prevent severe complications. A multidisciplinary group developed a protocol for tracking ECMO site post decannulation and created advanced wound care recommendations.

Methods

A wound care protocol was developed by wound care nurses, ECMO specialists and unit based skin champions and the pilot program was deployed in the cardiovascular intensive care unit over 2 months.



Primary assessment points
- Rates of implementation
- Infection
- Lymphorrhagia
- Sepsis
- surgical complications

ECMO Decannulation Site Orders

Description: Open, moist, and draining without necrotic tissue

1. Cleanse wound and periwound with Anasept wound cleanser
2. Pat with dry sterile gauze
3. Apply Cavilon skin protectant to periwound skin
4. Cut a piece of Aquacel Ag to cover draining areas
5. Apply dry sterile gauze over Aquacel Ag
6. Secure with Tegaderm transparent film
7. Change daily and PRN saturation/soiling
8. Consult MCS service for deterioration in site ie: drainage, slough, eschar, or wound dehiscence.

Description: Necrotic tissue present (enzymatic debridement option)

1. Cleanse wound & periwound with Anasept wound cleanser
2. Pat dry with sterile gauze
3. Apply Cavilon skin protectant to periwound skin
4. Apply Collagenase ointment to entire wound bed in a nickel-thick layer using sterile cotton-tipped applicator
5. Cover with Mepilex 4 x 4
6. Change daily and PRN
7. Consult MCS service for deterioration in site ie: drainage, slough, eschar, or wound dehiscence.

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Description: Necrotic tissue present (autolytic debridement option)

1. Cleanse wound and periwound with Anasept wound cleanser
2. Pat dry with sterile gauze.
3. Apply Cavilon skin protectant to periwound skin
4. Apply Therahoney gel to wound bed using sterile cotton-tipped applicator
5. Cover with Mepilex 4 x 4
6. Change daily and PRN
7. Consult MCS service for deterioration in site ie: drainage, slough, eschar, or wound dehiscence.

Results

15 patients were followed during the pilot

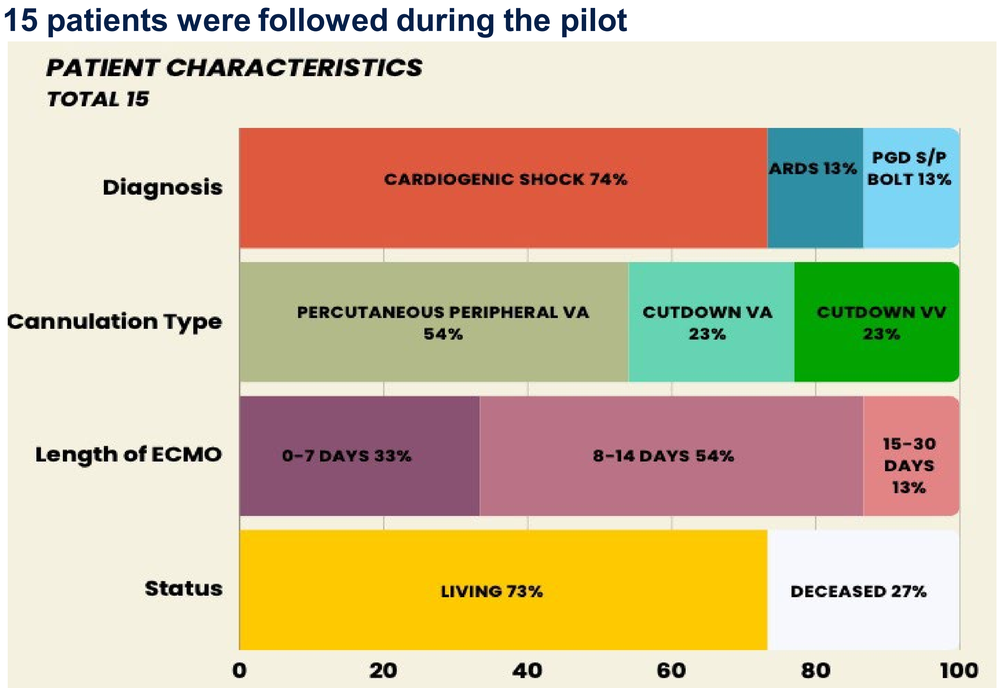

Figure 1. Patient and ECMO Characteristics
ARDS: Acute respiratory distress syndrome, PGD: Primary graft dysfunction, BOLT: Bilateral orthotopic lung transplant, VA: Veno-Arterial, VV: Veno-Venous

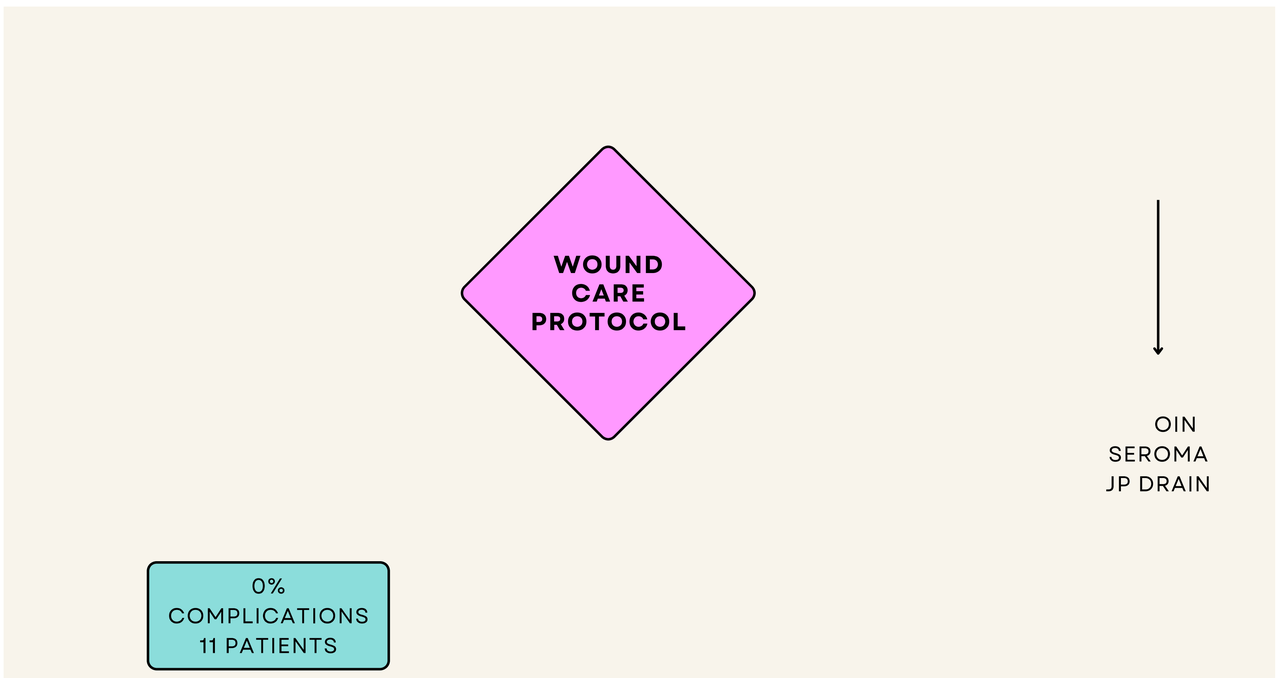

Figure 2. Protocol Outcomes

Implementation Rate: 100%
80% of the patients were flagged for protocol initiation (90% percutaneous peripheral VA)

Infection: 0%
Bacteremia: 0%
Lymphorrhagia: 0%
Surgical Intervention needed: 0%

Conclusions

A nurse-led protocol centered on consistent monitoring, early detection, and timely intervention has proven to be both safe and effective, mitigating the need for additional wound care consultations, preventing lapses in treatment, and ensuring additional adherence to wound care plans. Long term implementation on a larger scale and retrospective analysis of data pre and post intervention is under way to confirm these early findings.