VA-ECLS Mobility to Improve Surgical Outcomes

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BACKGORUND

- Since 2013, VV-ECLS patients (as a bridge to lung transplant) have been able to mobilize with the support from an interdisciplinary team
- VA-ECLS patients have a growing need for safe and feasible mobility with femoral cannulas in place
- Recent literature promotes early mobility in even groin cannulation patients, making this a goal for our program
- A traditional tilt-table was used on one patient requiring patient to slide from ICU bed. Despite it's benefits, this required extensive staff and had safety challenges.

PURPOSE

- To achieve safe and effective mobility on VA-ECLS patients who are femorally cannulated while waiting to bridge to transplant or durable device.

METHODS

- Using a preestablished protocol for VV-ECLS mobility, a team of therapists, nursing and physicians created relative guidelines for therapy for mobilizing VA-ECLS patients based on research from other facilities.
- The Vital-Go Total Lift Bed was brought in from a vendor and the team simulated ways to safely use the bed with patients who have femoral cannulas.
- The protocol was implemented on VA-ECLS patients once able to follow commands and hemodynamically stable.
- Patients were seen on POD 1 or POD 2 by occupational or physical therapy for initial assessment and to assess appropriateness for tilt bed.
- Once on the bed patients were seen daily by OT/PT as able until surgery or recovery to progress them as much as possible to full upright position and weight bearing.
- While standing patient participated in a variety of ADLs, exercises, and therapeutic activities to promote independence and strengthening.

*Top: First VA-ECLS patient transferred on traditional tilt table bed with support from 6 staff members in August 2018. **Right**: Pt standing using Vital-Go Total Lift Bed with the support of 1 staff for mobility and perfusionist to manage ECLS Pump in May 2019.*

GUIDELINES FOR THERAPY

Day of Parameters:

- Patient must be hemodynamically stable on ECMO.
- RASS Score +2 to -2 on as little sedation as possible; pt alert and following commands
- VA ECMO: SvO2 >65% to start mobility, mobility to cease if patient becomes symptomatic (increased work of breathing, lightheadedness, change in mental status).
- Titrate FdO2 and FiO2 to achieve SvO2/SpO2 goal.
- Continuously check with ECLS Specialist/Perfusionist that patient has reserve to continue
- Use of tilt table, 3- 10 minute time intervals upright as tolerated

Tilting Guidelines

- Unless otherwise indicated by the primary team, start by tilting to 30°.
- Assess patient response. Progress to 45°, 60°, 75°, and 82° per safe and feasible progression in ICU patients
- Assess patient vital signs at each level before progressing. Angle can be progressed in smaller steps if indicated by patient condition.
- Attempt to achieve highest level that the patient can tolerate each session.
- You may have a "Maximum angle achieved" and a "Treatment angle" if the patient was unable to tolerate the highest angle for the duration of the treatment time.

OUTCOMES

- In the past year, six (6) patients have achieved a score of 4 on the ELSO mobility scale while on VA-ECLS. In previous years these patients have had a score of "0".
- Patients have mobilized sooner post-op than historically seen with this population due to decreased deconditioning from prolonged bedrest.
- Patients have sustained on support more awake, off ventilator support, eating regular meals and participating in therapy on the days leading up to surgery.
- Along with participating in therapy the patients have been able to be more involved in their plan of care and complex decision-making process.
- Decreased staff involved is now required with mobility making it more efficient and productive for the staff.

ELSO MOBILITY SCORE

0-Nothing
1-Sitting in bed, exercises in bed
2-Passively moved to chair (no standing)
3-Sitting over edge of bed
4-Standing
5-Transfering bed to chair
6-Marching on spot(at bedside)
7-Walking with assistance of 2 or more people
8-Walking with assistance of 1 person
9-Walking independently with a gait aid
10-Walking independently without a gait aid

NEXT STEPS

- Continued training with the nursing staff on the bed and tilt-table protocols to allow for more standing during the day with RNs, increasing the level of mobility
- Progress to walking with appropriate patients; patients who require additional support from an impella will not be candidates for ambulation.
- Study more objective outcomes regarding hospital length of stay and level of independence upon discharge.