ISHLT JOURNAL WATCH
MECHANICAL CIRCULATORY SUPPORT. Oct'21

Jennifer Pavone, NP
Nursing & Allied Health Representative to Early Career & Trainee Committee

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Emerson, D. et al. Contemporary Left Ventricular Assist Device Outcomes in an Aging Population: An STS INTERMACS Analysis. *Journal of the American College of Cardiology*

STUDY HIGHLIGHTS

Question: Is there a difference in survival, functional outcomes, and quality of life after LVAD in contemporary practice?

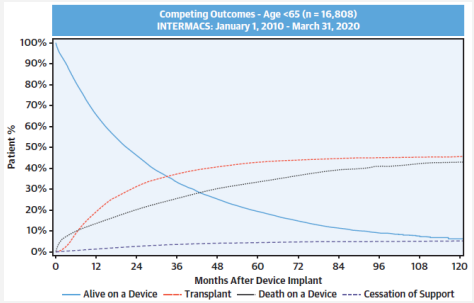
Design: Retrospective cohort analysis using STS INTERMACS

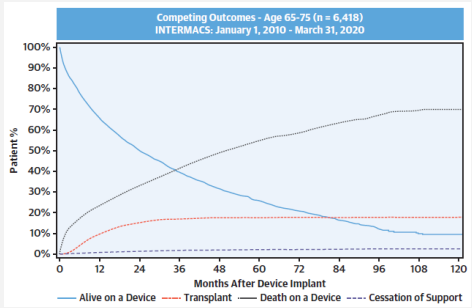
Inclusion: 24,2408 adult patients who received a durable LVAD from January 1, 2010 to March 1, 2020.

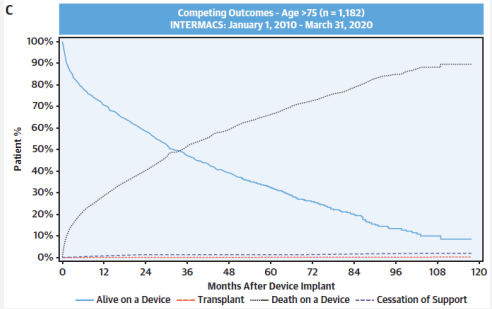
Outcomes: Primary: Adjusted survival. Secondary: quality of life, 6 minute walk distance, stroke, device malfunction, and rehospitalization stratified by age

Results: Newer generation devices are associated with reduced late mortality. Stroke, device malfunction or thrombosis and rehospitalizations decreased with increasing age. Functional capacity and quality of life improved after LVAD in all age groups.

CENTRAL FIGURES

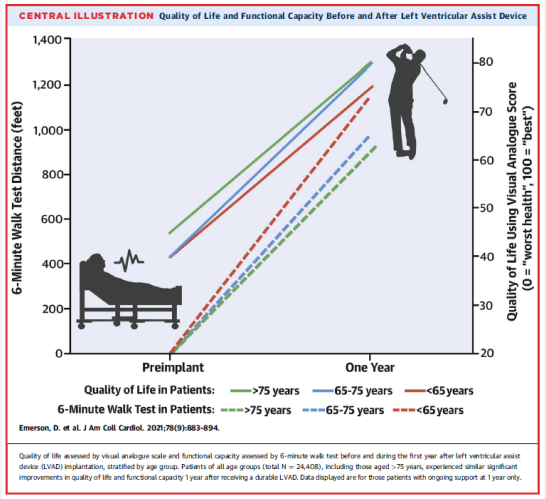






Competing Outcomes for
- *Age <65*
- *Age 65-75*
- *Age >75*

Survival on support in older patients has improved significantly



All age groups had improved quality of life and functional capacity

REVIEWER'S COMMENTS

- New generation LVADs have improved late survival on support
- Largest evaluation of function outcomes after LVAD to date
- Practice changes in most recent decade have led to better outcomes
- Heart transplantation allocation change in 2018 led to less BTT VADs; but proportion of elderly patients receiving VADs remains unchanged
- DT VADs in older patients may be under utilized

Limitations:
- Use of voluntary registry data may be incomplete
- 1000 MOMENTUM 3 patients were not reported through INTERMACS
- Data on long-term anticoagulation and anti-platelet therapy not available to help determine why older patients had lower stroke and thrombosis rate but higher rates of bleeding
- QOL data incomplete; possible reporting bias

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Hernandez-Montefort, J et al. Clinical Outcomes Associated with Acute Mechanical Circulatory Support Utilization in Heart Failure Related Cardiogenic Shock. *Circ Heart Fail.*

STUDY HIGHLIGHTS

Question: Identify prognostic variables in heart-failure related cardiogenic shock (HF-CS)?

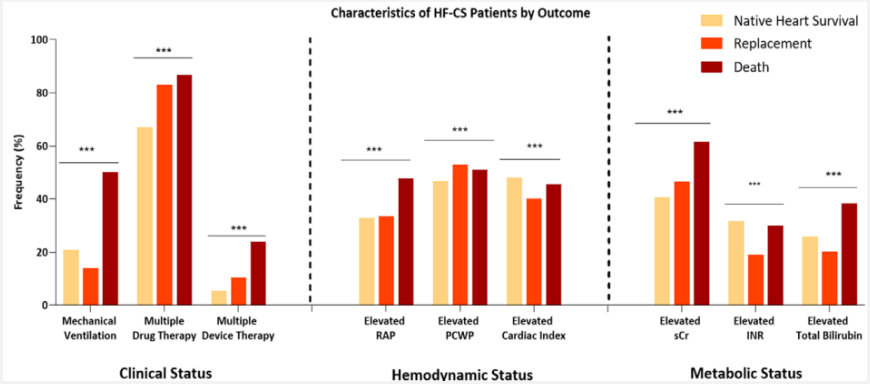
Design: Data from the Cardiogenic Shock Working Group registry- (CSWG)

Inclusion: 712 patients with HF-CS from 8 sites

Outcomes:
A) Mortality
B) Heart replacement therapy (HRT- durable ventricular assist device or cardiac transplant)
C) Native heart survival (NHS) at discharge

Results:
Overall mortality higher with high SCAI stage. Prognostic variables include Right atrial pressure, pulmonary capillary wedge pressure, lactate, and mean arterial pressures.

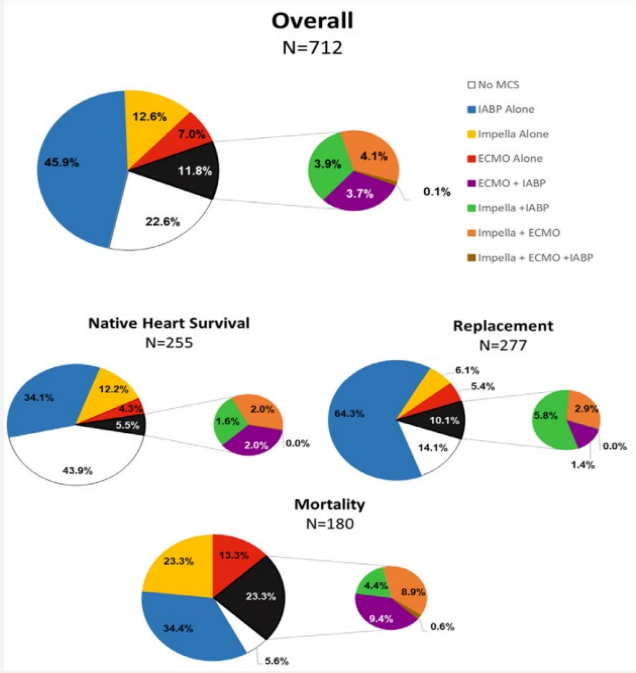
CENTRAL FIGURES



Multiple MCS and vasoactive medications were associated with higher mortality.

Patients who received temporary mechanical circulatory support (MCS) had lesser NHS and higher incidence of requiring HRT or higher mortality.

Data from Cardiogenic Shock Working Group (CSWG) registry will help shape future studies!



REVIEWER'S COMMENTS

- Given high atrial pressures, low systemic pressures associated with poor outcomes, broader use of PA catheters may be useful to guide/tailor therapies.
- As late stage SCAI stage D common in HF-CS, earlier evaluation/initiation of advanced therapies may have better long-term outcomes.
- Substantial heterogeneity noticed with use of MCS in CS-HF.

Limitations:
- Observational nature of study
- Granular data describing etiology of HF, timing on MCS, and dosage/titration/timing of vasoactive agents missing.
- Data post discharge is missing

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Chuzi et al. (2021). Perceptions of Bereaved Caregivers and Clinicians about End-of-Life Care for Patients with Destination Therapy Left Ventricular Assist Devices. *J Am Heart Assoc.*

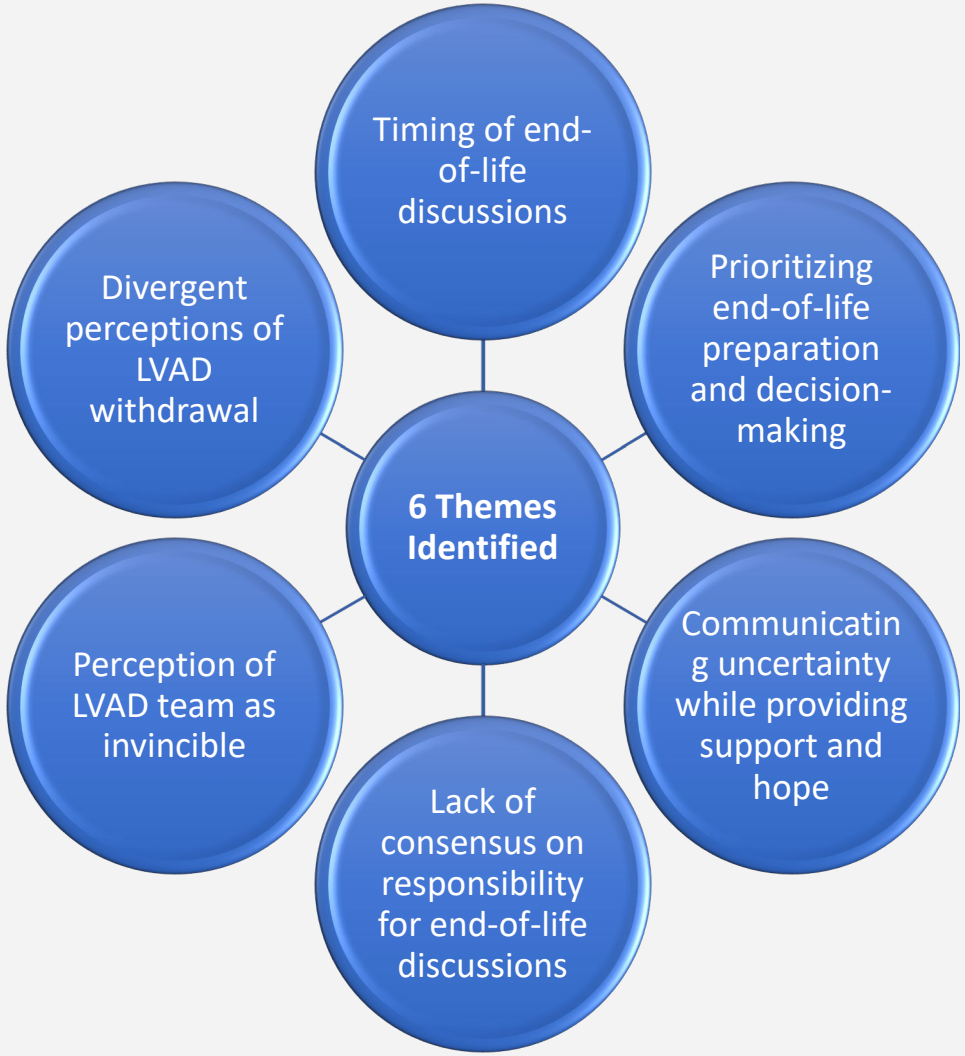
STUDY HIGHLIGHTS

- **Question:** Patients with DT LVADs receive suboptimal preparation for and care at end of life- there is limited understanding of these reasons
- **Methods:** Phenomenological study, semi-structured qualitative interviews of caregivers and clinicians caring for patients with DT LVADs
- **Sampling/Data Collection:** 7 caregivers and 10 clinicians took part in interviews, interviews were transcribed and coded to identify themes
- **Results:** 6 themes were identified (see figure to right)

LIMITATIONS

- Small clinician and caregiver sample sizes
- Single institution study
- Caregiver sample was homogenous, may not adequately reflect population of LVAD caregivers
- Potential caregiver recall bias

CENTRAL FIGURES



REVIEWER'S COMMENTS

- **Communication between patient, clinician, and caregiver is essential**
  - Clinicians should gain more experience reframing idea of hope
  - Focused hope (focus on cure) -> intrinsic hope (focus on being present)
- **Normalize conversations about end-of-life goals and wishes**
  - Normalize advanced planning discussions, tie into routine care
  - Serious illness training for all clinicians
- **Early and regular palliative care involvement**
  - PalC remains underused in LVAD patients
  - Home-based PalC teams are a great resource
  - Allows for timely transition to hospice with adequate preparation