Sex Differences in Left Ventricular Assist Device-related Emergency Department Encounters in the United States


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Existing data demonstrate sex differences in characteristics and outcomes of patients with LVADs

• When compared with men, women with left ventricular assist devices (LVADs) exhibit different comorbidities, rates of adverse events, and mortality.

• There are limited data regarding sex differences in LVAD-related patient encounters in the emergency department (ED).

• *We hypothesized that comorbidity burden and clinical outcomes of LVAD patients who visit the ED vary by sex.*
Methods

• We performed a retrospective analysis of 44,042 LVAD-related ED encounters from the 2010-2017 Nationwide Emergency Department Sample.

• International Classification of Diseases (ICD)-9/10 codes were used to identify patients with LVADs and their associated primary and comorbidity diagnoses.

• Demographics, clinical characteristics, and outcomes were compared via Chi-square testing.
Results

• Women comprised 26% (n=11654) of LVAD-related ED visits.
• Compared to men, women were
  o younger (58.1 years vs. 61.5; p<0.01),
  o less likely to have coronary artery disease (26.5% vs. 37.0%; p<0.01) and diabetes (34.8% vs. 39.2%; p<0.01), and
  o more likely to be obese (15.2% vs. 11.9%; p<0.01) and have depression (14.3% vs. 11.0%, p<0.01).
• Women presented less often with arrhythmia (6.2% vs. 8.1%; p=0.01) but experienced similar rates of device complication, stroke, bleeding, and infection (p for all >0.05).
• Women underwent endoscopy less frequently than men (5.1% vs. 6.8%, p<0.01), but there were no differences in device exchange and heart transplantation (p for both >0.05).
• Despite being less likely than men to be admitted to the hospital (61.6% vs. 67.6%, p<0.01), women experienced similar overall mortality (2.8% vs. 3.1%, p=0.4).
Comorbidities (A), Primary Diagnosis (B), Emergency Department or Hospital Procedures Performed (C), Outcomes (D) of LVAD-related ED Encounters by Sex

A

Comorbidities by Sex

B

Primary Diagnosis by Sex

C

ED or Hospital Procedures by Sex

D

Outcome by Sex

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Conclusions

• Compared to men, the comorbidity profiles and clinical outcomes of women with LVADs who seek ED evaluation significantly differ.

• Future analyses will further explore the disparity in hospital admission by sex despite similar mortality rates.

• Understanding these sex differences among VAD patients is a critical step in the effort to improve long-term outcomes.