


# LVAD antimicrobial prophylaxis and infections: a 12-year experience

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## ABSTRACT

- Implantable left ventricular assist devices (LVADs) are utilized both as a bridge to heart transplant or as destination therapy.
- Antibiotic prophylaxis at time of LVAD implantation is an important strategy to mitigate LVAD associated infections (LVADI).
- A clear surgical infection prophylaxis regimen and associated outcomes have not been reported.

## METHODS

- Single center, retrospective cohort study
- LVAD implants between February 2007 and June 2019 at Mayo Clinic at Rochester, MN.
- Primary outcomes: incidence of infection within 90-day of implant.
- Secondary outcome: infections within 1 year of implantation and risk of *C. difficile* infections

## RESULTS

**Single drug prophylaxis (SDP)**: cefazolin only, vancomycin only, or cefazolin and vancomycin

**Multidrug (MDP)**: either of the SDP regimens plus another antibiotic.

Table 1: Characteristics of patient undergoing LVAD implantation

Variable	Number (%)
Age at implantation median/IQR	62 [52.5 – 69]
Male	322 (79.9)
Indication for LVAD	
Bridge	244 (60.5)
Destination	159 (39.4)
Colonization	
MRSA	35 (8.7)
VRE	38 (9.4)
Comorbidities	
Diabetes	120 (29.8)
Hypertension	171 (42.4)
CKD	208 (51.6)
Hyperlipidemia	179 (44.4)
Device Type	
HeartMate II	289 (71.7)
HeartWare	83 (20.6)
HeartMate III	12 (3)
Other	19 (4.7)
<b>Antimicrobials*</b>	<b>Number (%)</b>
Single Drug	307 (76.2)
Cefazolin	239
Vancomycin	27
Vancomycin + cefazolin	135
Multi-drug	95 (23.8)
Gram negative	48 (11.9)
Cefepime	46
Other	25
Fluconazole	36 (8.9)
Rifampin	7 (1.7)

## OUTCOMES

**Time to infection (months)**

SDP: 30.5 [21.2 – 52.1]  
MDP: 27.8 [15.5 – 43.8]

**LVADI at 90 days**

SDP – 1 patient  
MDP – 1 patient

**LVADI at 1 year**

SDP – 8 patients  
MDP – 6 patients

***C. difficile* 90 days**

SDP – 12 cases  
MDP – 8 cases

## CONCLUSIONS

There was no significant difference in incidence or time to first infection, within 90-day and 1-year of implantation, between single- and multidrug antibiotic surgical prophylaxis regimens administered at the time of LVAD implantation.

## REFERENCES

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