

30-Day Survival After Temporary Right Ventricular Assist Devices: A Systematic Review

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BACKGROUND:

Acute right-sided heart failure (RHF) is a complex clinical syndrome, with a wide range of clinical presentations, associated with increased mortality and morbidity, but with a scarcity of evidence-based literature. Temporary right ventricular assist device (t-RVAD) is a potential treatment option for selected patients with severe right ventricular dysfunction as a bridge-to-recovery or as a permanent solution.

OBJECTIVES:

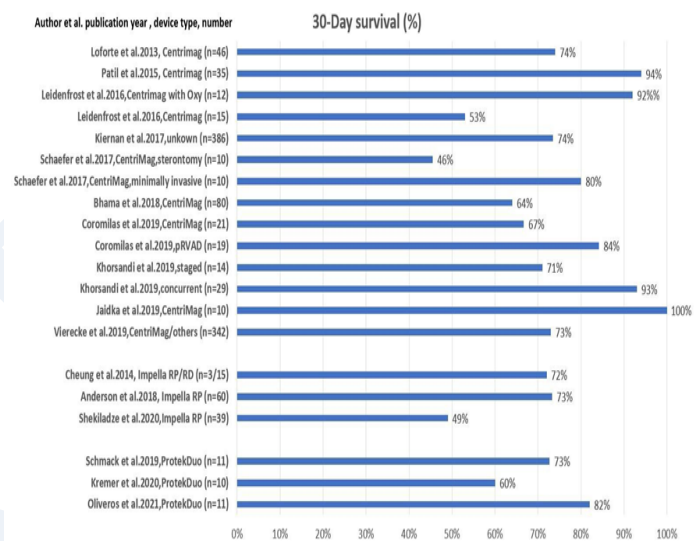
We sought to conduct a systematic review to determine the safety and efficacy of t-RVAD implantation.

METHODS:

From inception to November 2021, a systematic review was performed and reported according to the PRISMA guidelines.

RESULTS:

Thirty-one studies met the inclusion criteria, from which data were extracted. Due to the significant heterogeneity between studies, the pooling of data for meta-analysis was not deemed appropriate. Successful t-RVAD weaning ranged between 23% and 100%. Moreover, 30-Day survival post temporary RAVD implantation ranged from 46% to 100%. Bleeding, acute kidney injury, stroke, and device malfunction were the most commonly reported complications.



CONCLUSION:

Although t-RVAD is a lifesaving option for patients with severe RHF, the evidence stems from small non-randomized heterogeneous studies utilizing a variety of devices. Both etiology of RHF and time of intervention might play a major role in determining the t-RVAD outcome. Standardized endpoints definitions, design, and methodology for t-RVAD trials are needed. Furthermore, efforts should

continue in improving the technology as well as improving the timely provision of t-RVAD