Stop Draggin' My Heart Around: Recidivism, Intravenous Drug Use, and Endocarditis

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The incidence of intravenous drug use (IVDU) has more than doubled in the past twelve years in the United States. Consequently, cardiac surgeons are increasingly exposed to the downstream effects of increased IVDU, namely infective endocarditis (IE) To date, rates of recidivism after valve surgery for IE have been poorly quantified and the impact of recidivism on long-term outcomes poorly understood.

Tiako et al provide an incredible examination of the current climate cardiac surgeon's face and convey for the first time statistical data quantifying the risk of recidivism on outcomes following valve surgery for incidence of intravenous drug use (IVDU)-related infective endocarditis.[1] IVDU patients were younger and had fewer comorbidities but had higher preoperative creatinine levels and more frequent histories of liver disease. IVDU patients also had lower preoperative risk profiles based on the Society of Thoracic Surgeons (STS) endocarditis risk score. Gram-positive bacteria accounted for the majority of pathogens in both groups, but fungal infections were more common among IVDUs, while *Staphylococcus aureus* and streptococcal species were more common among non-IVDUs. A multivariate logistic regression model for composite postoperative events showed no difference between the 2 groups at 30 days but did show an increased risk of long-term mortality following valve replacement with IVDU patients after risk adjustment. The leading causes of death among non-IVDUs were end-stage organ failure and malignancy. Recidivism accounted for a staggering 69% of long-term deaths in the IVDU cohort.

Like any single-center retrospective study, this research is not without limitations. Important determinants of midterm survival were left out of the analytic plan including socioeconomic status and health insurance status. Important to this patient population, too, was discharge status—how many of the IVDU cohort were discharged to home? What are the current resources at the research institution for discharge in the IVDU cohort, and how any of this group was discharged to inpatient rehabilitation facilities?

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Central Message

Outcomes after valve replacement for IVDU-related IE are worse, particularly with recidivism, compared to nonusers, despite being younger with less comorbidity.

Brief Summary of the Commentary

The commentary on this manuscript reflects the strength of the study in detailing worse outcomes following valve replacement in IVDUs compared to nonusers and the impact of recidivism on outcomes amongst IVDUs. However, this manuscript herein also highlights certain limitations to the research.

The importance of this research lies, however, in the study of recidivism, defined as recurrent endocarditis following valve replacement or death due to substance abuse. One of the most interesting findings of the study was recidivism as the leading cause of death among IVDUs with one-third of these patients dying from overdose. That data are sobering and show the far-reaching hold of addiction on this population. Even after a major cardiac operation, nearly 70% of the IVDU relapsed.

The ethical implications of this research are many. The authors, rightly, identify the need for further resources to treat the underlying disease of addiction following treatment of the symptom, that being infective endocarditis. Inpatient rehabilitation services are costly yet necessary for many of these patients in order to provide the optimal chance at recovery. How, then, are surgeons to deal with recidivism and recurrent

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endocarditis when it occurs? Reoperation? If so, how many reoperations are too many, and when is too soon? When should surgeons stop dragging these hearts around for the well-being of society and for individual patients?

REFERENCE

1. Tiako M, et al: Recidivism is the leading cause of death among intravenous drug users who underwent cardiac surgery for infective endocarditis. STCVS 31:40–45, 2019