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Letter to the Editor

# Why does infective endocarditis from injection drug use bite the tricuspid valve?☆

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To date, why the tricuspid valve is preferentially infected in injection drug users is still an unanswered question in medicine [1]. We thank Bassareo et al. [2] for their proposed conceptualization of right-sided IE secondary to IDVU as a perfect storm of modulating, triggering and anatomical factors. The modulating factor is immunosuppression in injection drug users. Indeed, many but not all IV drug users are immunosuppressed by concurrent infection by HIV, Hep C and other infections [3]. It is not clear how this explains right- versus left-sided valve involvement.

Regarding the triggering factor, the authors point to Staphylococcus as the primary infective agent. We agree that *S. aureus* is a very virulent species but the link to right-sided endocarditis is again not clear. There is no data to suggest that *S. aureus* infection in non-drug users involves the tricuspid valve at a greater rate than infection by other bacterial species.

For anatomical factors, the authors point out that the tricuspid valve is the first valve encountered and is often abnormal. Vegetations form due to endothelial injury and thrombus formation and here the risk of infection could be greater for specific drugs such as heroin, which can increase in pulmonary arterial pressure, creating greater valvular turbulence [4]. Whether certain drugs could be associated with tricuspid injury and greater involvement is an intriguing question [5].

The proposed three-part explanation is a good start but there remain many unanswered questions regarding the pathogenesis of injection drug use-related infective endocarditis.

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