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Commentary: Left ventricular assist device infection: Welcome to Babel!

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CENTRAL MESSAGE

The great worth of the scoping review by Pienta and colleagues is to offer a comprehensive picture of LVAD infection baring all the issues of the research in this field.

Heart failure affects 6.5 million adults in the United States. Since heart transplantation is limited by an organ shortage, durable mechanical circulatory support has rapidly evolved, from first to third generation, in a 30-year time frame.^{1,2} Although we have made technological improvements to mechanical circulatory support over the years, providing today a 1-year survival at of 81%,¹ infection remains the most common left ventricular assist device (LVAD) complication, contributing to major morbidity and mortality post-LVAD. Infections may occur in 19% to 39% of recipients, resulting in more than 10% of LVAD-related deaths.² Driveline infection is confirmed to be the most common one in this setting of patients (12%-35%),^{1,2} and the longer the LVAD support duration, the greater the infection rate.³

However, these numbers have to be managed with care, and any comparison in terms of prevalence, outcome, and management may be inapplicable, given that there is a wide spectrum of definitions used. The great worth of the scoping review by Pienta and colleagues⁴ is to offer a comprehensive picture of LVAD infection baring all the issues of the research in this field.

Let's step back and define what actually is a scoping review. It is a relatively new approach to research, with

the aim of providing an overview of the available literature without producing a summary answer to a discrete research question. Scoping reviews can be useful for answering broad questions such as "What information has been presented on this topic in the literature?" and for gathering and assessing information before conducting a systematic review or any other form of further research.^{5,6}

In the paper by Pienta and colleagues,⁴ the questions at the basis are "what information has been presented on LVAD infection in the literature? And how? Is there any difference between clinical trials and real word?" After reading this scoping review, the only comment we feel comfortable making is "welcome to Babel." In fact, the review shed light on the different questions to be solved to generate more homogenous research in this field so to trace some useful conclusions.

The most important item coming from this scoping review is that among 132 enrolled studies, only 48 (36%) used standardized International Society for Heart and Lung Transplantation definitions.^{7,8} Although the number of articles adopting this definition increased over time, in 2017, the rate was still too low (only 58%). More interesting food for thought is the hugely asymmetric geographic distribution of the research in this field, with the United States lording over publishing with 67% of selected papers. Finally, only 7.6% of papers are clinical trials and this is a big issue, mostly if we would like to fix some key points in the management of LVAD infection.

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The warning launched by Pienta and colleagues⁴ should not be unheard, and we also advocate more scoping reviews in other fields of cardiac surgery so to watch the real Babel hidden among the great amount of literature published year by year.

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