International Journal of Cardiology 289 (2019) 50–51

Contents lists available at ScienceDirect

International Journal of Cardiology

journal homepage: www.elsevier.com/locate/ijcard

Editorial

Should we implement interventions to reduce readmissions in open heart valve surgery?

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ARTICLE INFO

Article history:
Received 21 March 2019
Accepted 5 April 2019
Available online 8 April 2019

The care of patients with valvular heart disease has improved significantly over time with better case selection, advanced surgical techniques and post-operative management. Despite a higher patient risk profile, mortality rates have declined [1]. The observed improvements in peri-procedural and post-procedural valve surgery outcomes have resulted in a growing awareness of other markers of quality/efficacy. Particularly, health service providers are focussed on unplanned readmissions as an index outcome.

In this issue of the International Journal of Cardiology, Borregaard et al. describe the INVOLVE study which prospectively evaluates the impact of an individualized follow-up intervention on unplanned cardiac readmissions and mortality after open heart valve surgery. This study found that unplanned cardiac readmissions are significantly reduced with an intervention that involves patient evaluation, risk assessment, patient education, telephone follow-up and nurse-led outpatient consultations. This study demonstrates that this strategy was associated with reduced unplanned cardiac readmissions within 180 days of discharge in both unmatched and propensity matched analysis.

This study emphasises the value of tailored individual care to reduce post-procedural cardiac readmissions. While this is the first study to specifically target the population undergoing open heart valve surgery, a previous study has shown reduced readmission rates following percutaneous coronary intervention by intervening during the index hospitalization, post-discharge and subsequent outpatient appointment and during any potential repeat presentation at the emergency department [2]. Interestingly, the intervention in the study by Borregaard et al. targeted only the post-discharge phase and may derive additional value by targeting index hospitalization and repeat presentation phases.

While this study by Borregaard et al. focussed selectively on cardiac readmissions and highlights an approach to reduce these events following heart valve surgery, a more pertinent issue for healthcare providers is all-cause readmissions. It has been reported that the all-cause readmission rates after aortic valve surgery is 17% at 30-days [3] and a nationwide Danish study of heart valve surgery reports an overall rate for one year readmissions at 56% [4]. These studies corroborate evidence from the US Nationwide Readmission Database demonstrating that two-thirds of patients are readmitted for non-cardiac causes [5]. Non-cardiac readmissions after procedures have also been observed in other settings such as patients who undergo percutaneous coronary intervention [6] as comorbidities were a key driver of readmissions [7]. Prevalence of comorbidities and its impact on non-cardiac readmissions influences patient selection for open heart valve surgery as, understandably, not all patients will be suitable due to prohibitive surgical risk. Nevertheless, there is definitive value in optimisation of comorbid conditions both before and after surgery.

Furthermore, while this study supports introduction of interventions to reduce readmissions following heart valve surgery, certain caveats pointed out by the authors are worthy of consideration when seeking to implement these plans. Principally, the robustness of the healthcare system plays a key role, and in particular, the infrastructure in primary care and community health services would largely determine the success of any such strategy. An audit of cardiac surgical unit postoperative morbidity and readmission outcomes would guide any necessity to undertake suitable measures.

A key outstanding issue is the expenditure of resources required to implement proposed interventions. A measure of clinical effectiveness is required to reinforce its value for health care providers and it is important to show that potential benefits derived by patients will be outweighed by the costs of implementing the intervention. In future, considerable value would be gained by evaluating the health economic impact of interventions designed to reduce readmissions.

In summary, Borregaard et al. have demonstrated an intervention which can reduce cardiac readmissions after open heart valve surgery. It is evident that a successful design to adopt this plan in clinical practice should incorporate all unplanned readmissions as non-cardiac readmissions are more prevalent. While a multidisciplinary team approach of the intervention with nurses, specialist cardiologist and heart

DOI of original article: https://doi.org/10.1016/j.ijcard.2019.02.056.
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https://doi.org/10.1016/j.ijcard.2019.04.021
0167-5273/

surgeon should be commended, a wider collaborative network with other specialists such as general medicine, respiratory physicians and elderly care specialists may enable optimisation of patients and mitigate potential readmissions. Overall, healthcare providers and patients will benefit from fewer readmissions and such interventions would improve the holistic delivery of healthcare.

Conflicts of interest disclosures

The authors report no relationships that could be construed as a conflict of interest.

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