

Editorial

Repatriation From Tertiary Care Centres After Emergency Coronary Angioplasty: Avoiding a Patient “Shell Game”

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Patients with acute cardiac syndromes who present to community hospitals but require prompt access to specialized equipment and medical expertise are a strategic and financial challenge to regional care delivery all across Canada. This is particularly true in acute ST-elevation myocardial infarction (STEMI) care. Patients diagnosed early with subsequent transfer for direct percutaneous coronary intervention (PCI) within 90 minutes experience benefit. Those at a greater distance from tertiary centres and who receive thrombolytic therapy also experience an outcome advantage if they can be transferred immediately for timely mechanical intervention if thrombolytic therapy fails.¹ Unfortunately, facility distribution patterns and challenging geography lead to significant regional variation in travel times to specialty care.²

Mitigating access challenges by adding more interventional facilities is one option, but a strategy of early diagnosis and prompt patient transport to existing cardiac centres is seen as the solution of greatest value. However, a transfer strategy not only creates bed pressure on tertiary cardiac centres, it also dilutes the exposure of regional centres to acute coronary syndromes and related conditions such as heart failure. This dilution could reduce the relevance of regional hospitals to their communities and make them less attractive to young health care workers who want to locate, be challenged, and make a difference. So, when patients are moved and specialty services are performed, moving patients back to their regional hospitals of origin to complete their hospital stay and share the care experience makes good sense.³

But could there be negative consequences to a strategy of repatriation? Abuzeid et al. asked this question based on repatriation experiences between 2010 and 2012 at 4 Toronto region interventional hospitals and the results are published in this issue of the *Canadian Journal of Cardiology*.⁴ This study

was undertaken early after publication of the Trial of Routine Angioplasty and Stenting After Fibrinolysis to Enhance Reperfusion in Acute Myocardial Infarction (TRANSFER-AMI), a study in Manitoba, Ontario and Quebec in which the value of a routine expedited pharmacoinvasive strategy for STEMI care was investigated, a strategy that mandates frequent patient transfers.^{5,6} After propensity matching repatriated and nonrepatriated patients who had received primary PCI, all-cause mortality and readmission for recurrent myocardial infarction (MI) at 1 year was assessed. Mortality was not significantly different but readmissions for MI were greater in the repatriated group, which suggested that there might be safety issues that need to be addressed.

Readmission as a Quality Metric

Readmission rates after acute MI (AMI) are usually measured at 30 days with published rates ranging between 11% and 28%;⁷ and all-cause readmission rates show a positive correlation with 1-year mortality.⁸ In a large regional database readmission rates were greater for the broader category of acute coronary syndrome admissions, with a total readmission rate of 34% at 30 days (11.2% coronary readmissions) with total readmission at 1 year in 64%.⁹ STEMI 30-day coronary readmission rates vary worldwide ranging from 4.4% to 19.2% with United States and Canadian rates being 14.4% and 5.6%, respectively.¹⁰ In the report by Abuzeid et al., cardiac readmission rates at 30 days were 5.8% and 2.0% in repatriated and nonrepatriated patients, respectively.⁴ With this significant readmission rate variation but with a similar 1-year mortality rate, the implied safety concern for repatriation needs further clarification.

Because readmissions are serious events that are costly and possibly avoidable, the Centre for Medicare and Medicaid Services in the United States imposed a downward reimbursement adjustment on centres with high readmission rates. This has drawn considerable attention to readmission as a quality metric. The adoption of readmission as a quality metric is tenuous because there is little evidence that readmission is a valid marker of suboptimal care; risk-standardized analyses of readmission and mortality do not correlate, and robust models for readmission prediction are lacking.^{8,11,12}

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Optimal Care Planning and Lifestyle Modification

If repatriation has unfavourable consequences, they are likely the result of inadequate communication with patients and their families and between health care providers. With current interventions, hospital stay with STEMI is short, often just 2 days, and this trend is supported by evidence that the mortality of a 2-day stay is no greater than that of a stay of 4-5 days.¹³ This brief STEMI hospital stay limits time available for meaningful patient engagement and repatriation can then fragment the limited time that is available.

A very recent examination of PCI patient education before discharge in Sweden revealed a disturbing lack of patients' understanding of the cause of their medical condition and an incomplete understanding of needed lifestyle changes. After discharge less than half of patients attended cardiac rehabilitation, increased their physical activity, or followed dietary advice.¹⁴ The clinical and psychosocial factors that limit rehabilitation participation have been studied and strategies to address these factors before discharge, if there is the opportunity, are likely to improve attendance.¹⁵ In fact, a number of publications have highlighted the challenges of patient communication on the subject of lifestyle modification during acute coronary syndrome admissions, leading to the conclusion that there is a need for innovation in patient education and communication.^{16,17} Unfortunately, repatriation reduces the time available for patient interaction, which further complicates this critical communication and education process.

Communication between care-givers was encouraged in the Toronto study. Most transfers were preceded by a physician-to-physician telephone call and family physicians and cardiologists saw a high percentage of patients within a reasonable amount of time after discharge.⁴ Unfortunately, we have no information on in-hospital education programs used at the sending and the receiving hospitals.

The work of Abuzeid et al. presents the first published evidence that repatriation is associated with an increase in readmissions for AMI at 30 days and at 1 year after admissions for AMI that included a direct PCI.⁴ Because an increase in mortality could not be attributed to this readmission rate difference, the clinical importance and determinants of this difference require further study. At present there is certainly no reason to discourage the practice of repatriation after direct PCI in STEMI care. However, it is likely prudent to re-evaluate the patient education and planning after discharge as length of hospital stay diminishes.

Expedited patient transfer to tertiary cardiac centres for specialty care with timely repatriation is a reasonable strategy for community hospitals. It limits the burden on tertiary centres and allows community hospitals to participate in and be comfortable with the care of patients with more complex cardiac conditions. Without specific mitigation protocols, patient movement in these circumstances can become a patient 'shell game' with loss of care continuity and lost opportunities to talk with patients about their disease and its management.

Disclosures

The author has no conflicts of interest to disclose.

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