

EDITORIAL COMMENT

Expert Article Analysis for:

[Rotational atherectomy and same day discharge: Safety and growth from a national perspective](#)

Finding sideline benefits—Of pandemics and same-day-discharge following rotational atherectomy

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Key Points

- The occurrence of same-day discharge following elective rotational atherectomy cases in England and Wales during 2007–2014 increased from approximately 7 to 36%.
- High-volume centers and transradial approach were associated with more likelihood of same-day discharge.
- As compared with patients who stayed for overnight observation following elective rotational atherectomy, those discharged the same day as the procedure had a similar rate of 30-day mortality (0.35 and 0.50%, respectively; $p = 0.409$).

The negative impact of SARS-CoV-2 virus on the health of individuals worldwide cannot be considered lightly. For example, it was recently estimated that the average lifespan in the United States declined by > 1 year because of the COVID-19 pandemic. So, too, the adverse impact on hospitals and health systems has been heretofore unimaginable. Yet, it is said about trying times that necessity is the mother of invention. While the concept of same-day discharge following elective

surgical procedures has evolved and expanded in recent years, there has been an even greater impetus during the viral pandemic to discover and discern ways to keep patients out of hospital and facilitate same-day discharges including for cardiac-related procedures.¹

In parallel to the mission of reducing hospital admissions following cardiac procedures, healthcare systems and payors globally continue to shift their thinking and goals from volume-based care delivery and reimbursement to one that is value-based. Given that an outpatient coronary intervention cost several thousand dollars less than one requiring hospital admission² it seems intuitive that if quality can be maintained at a lower cost, that better value should be yielded. With these thoughts in mind, the study reported by Taxiarchi et al. in this issue of the journal is timely.³ While the date of procedures considered cover prior years (2007–2014), many insights can be gleaned from the nearly 4,600 elective rotational atherectomy cases reviewed comparing those who were discharged the same day as the procedure versus staying in hospital overnight.

The reasons or predictors for overnight hospital stay post-procedure are many and make sense, including more complex patients (e.g., advanced age, Q-waves on ECG, valvular heart disease), more complex procedures performed (e.g., multivessel interventions, left main, penetration wires), and medications requiring ongoing intravenous administration (i.e., platelet glycoprotein IIb/IIIa inhibitors). Unfortunately, few to none of these factors or characteristics are mutable. In contrast, perhaps it is better—presuming same-day discharge continues to be a goal—to focus on factors or predictors which are associated with same-day discharge or that are mutable. The most obvious of these is radial arterial access use since it is associated with lower rates of bleeding and earlier ambulation post-procedure. As the authors nicely point out, same-day discharge frequency increased during the years of study (from 7 to 36%) and radial access use (which undoubtedly increased in tandem) was directly predictive of being discharged on the day of the procedure (OR = 1.77, 95% CI [1.45–2.15]). Another interesting predictor for early discharge is hospital procedural volume. Centers with higher procedural volumes tended to more often discharge patients the same day as procedure. This suggests operator comfort or experience may influence the decision or the development of care pathways to facilitate early discharge.

Lastly, what is impressive, like in many areas of cardiovascular medicine, is the variability among centers and geographies regarding same-day discharge. The literature reports a several-fold range of early discharges for various procedures, years of study, and for practice locations.^{2,4} Taxiarchi et al. demonstrated such variability among regions in the United Kingdom in figure 3, and this is again plausibly related to operator comfort, experience, and time. Their current findings of a similar 30-day mortality for same-day discharge compared

with overnight stay after rotational atherectomy (0.50 and 0.35%, respectively; $p = 0.409$) reinforces their prior report of similar findings related to all elective percutaneous coronary revascularization procedures.⁵ While such observations are not from randomized discharge assignments, the low and consistent adverse events rates in contemporary practice should provide further reassurance to interventionalists regarding same-day discharge.

As the (hopefully) post-pandemic world is emerging, let us hope that the processes put in place to appropriately select patients for elective coronary revascularization procedures and in a streamlined and minimalistic fashion to support same-day discharge will be maintained and accelerated. Undoubtedly, such practices will be welcomed by patients, health systems, and payors and be a sideline benefit from the recent struggles from COVID-19. Prospective randomized studies can help to better define predictors, models, and recommend algorithms to be followed, but until then more comfort can be garnered from the current observations of Taxiarchi et al.

CONFLICT OF INTEREST

The authors declare no conflicts of interest.

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