

EDITORIAL

The Truly Functional Heart Team: The Devil Is in the Details

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The multidisciplinary team concept for the management of patients with cardiovascular diseases is now well ingrained into the culture of most hospitals and healthcare systems.^{1–8} Despite the lack of a robust evidence base demonstrating benefit, the heart team for clinical decision making is a Class I Recommendation in both the US and European guidelines albeit Level of Evidence C.^{7,9,10} Too frequently, however, in practice, the heart team is more virtual than real or worse, it is a perfunctory “check box” at some centers. An ever-increasing variety of publications relating and attesting to the positives of the heart team while describing the potential nuances, fail to serve as a template for its actual implementation.^{11–13} So how then does a center put into practice the concepts of a true heart team approach and demonstrate better patient care?

See Article by Young et al.

The single-center clinical presentation on the multidisciplinary heart team in this issue of the *Journal of the American Heart Association (JAHA)* adds some foundational building blocks to the intuitive and attractive but rather ill-defined concept of the heart team.¹⁴ It describes in detail their multidisciplinary coronary artery disease Heart Team Consultative Service that had been in place at Massachusetts General Hospital since January 2015. This article by Young and Kolte, both of whom contributed equally as a “team,” fills some of the implementation gaps

and addresses the logistical issues regarding creation of a truly functional heart team (ie, “the devilish details.”) It describes 166 (2.7%) of 6120 patients undergoing coronary revascularization at Massachusetts General Hospital from January 2015 to November 2018 who were deemed high risk and underwent the formal Heart Team consultation. The composition of the team included a median number of 6 physicians per Heart Team meeting (interquartile range [IQR] 5, 8). Whether the other 5954 patients undergoing coronary revascularization who did not receive the benefit of the Heart Team were not high risk or because it was inconvenient for the Heart Team to meet or whether the decision for a specific revascularization was obvious, is not indicated in the article but may have important implications for the actual practicality of instituting such a program.

While the specifics of the patients in this experience can be debated; for example, the SYNTAX tertile was low in 35.9% of patients, and using the STS Predicted Risk of Mortality, 53.6% were also low risk. However, the process is detailed in some depth. A tool was developed that is quite ambitious and comprehensive (figure 1 of 14). It is described by the authors as “succinct yet practical.” That description may depend upon who is filling out the form and whether it could be populated by an electronic health record. A consult for the multidisciplinary Heart Team was requested via the electronic health record and then convened within 24 to 48 hours of the request aimed at including the patient’s primary cardiologist, ≥ 2 interventional cardiologists, and ≥ 2 cardiovascular surgeons. The total median number of attendees was 6 (IQR 5, 8), cardiovascular surgery 3 (IQR 1, 4), interventional

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cardiology 2 (IQR 2, 3), and general cardiologist 1 (IQR 1, 2). Others were involved as felt to be necessary (ie, palliative care in 9.0%). The median duration between heart team meeting and the treatment by percutaneous coronary intervention was 1 day (IQR 0, 3) and by coronary artery bypass graft 3 days (IQR 1, 6).

While the authors are to be applauded for their success at implementing a well-functioning heart team, there are a number of details that still need to be addressed.

1. The authors state in their final portion of the discussion “From the current experience, we conclude that the formulation of a multidisciplinary process by which all high risk coronary artery disease patients are comprehensively risk stratified and evaluated is safe and realistically achievable in a busy tertiary referral system” seems to be more far reaching than the data, which suggests that in this specific patient population it was used in only 166 (2.7%) of 6120 patients undergoing coronary revascularization. Surely there is a greater percentage of patients who could potentially benefit from the multidisciplinary approach to clinical decision making.
2. How does the heart team function in patients who present with an acute coronary syndrome? In their patient population, 53% were non–ST-segment–elevation myocardial infarctions. Can these patients be put off until the Heart Team can meet? How does it work on weekends or on Friday before the weekend?
3. If there is true equipoise in the Heart Team members, how is the decision made as to which therapy to recommend? Is it the senior person that gets to make that final decision? Is it who referred the patient and to whom?
4. There is no information on how the process integrates with the patient and family. The authors state in the introduction that patients and their families are key stakeholders in the process. Yet nowhere are the patient’s goals and shared decision-making included in the process.^{11–13} Does the recommendation come down from on high from this group to the patients and their families? And how then is shared decision making performed as part of this process?
5. Another piece of information that is important is that repeat hospitalizations were very frequent in all of the groups, being 18% across the entire cohort. Does another group of caregivers need to be involved (for example, congestive heart failure or midlevel providers) to develop a strategy to prevent the need for repeat hospitalizations?

The work described in the article is admirable in continuing to build the foundation of a real functioning Heart Team with the demonstration that it occupies an important part at the heart of taking care of patients. Now on to the devilish details to make it even better.

ARTICLE INFORMATION

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Disclosures

Dr Mack is a Co-PI of Partner trial of Edwards Lifesciences, co-PI of COAPT trial of Abbot, and study chair of Apollo trial of Medtronic. Dr Holmes has no disclosures to report.

REFERENCES

1. Holmes DR Jr, Rich JB, Zoghbi WA, Mack MJ. The heart team of cardiovascular care. *J Am Coll Cardiol*. 2013;61:903–907.
2. Holmes DR Jr, Mack MJ, Kaul S, Agnihotri A, Alexander KP, Bailey SR, Calhoun JH, Carabello BA, Desai MY, Edwards FH, et al. 2012 ACCF/AATS/SCAI/STS expert consensus document on transcatheter aortic valve replacement. *J Am Coll Cardiol*. 2012;59:1200–1254.
3. Baumgartner H, Falk V, Bax JJ, Bonis M, Hamm C, Holm PJ, Jung B, Lancellotti P, Lansac E, Muñoz DR, et al. 2017 ESC/EACTS guidelines for the management of valvular heart disease. *Kardiol Pol*. 2018;76:1–62.
4. Rosenschein U, Nagler RM, Rofe A. The heart team approach to coronary revascularization—have we crossed the lines of evidence-based medicine? *Am J Cardiol*. 2013;112:1516–1519.
5. Bonzel T, Schächinger V, Dörge H. Description of a Heart Team approach to coronary revascularization and its beneficial long-term effect on clinical events after PCI. *Clin Res Cardiol*. 2016;105:388–400.
6. Chu D, Anastasio MM, Mulukutla SR, Lee JS, Smith AJ, Marroquin OC, Sanchez CE, Morell VO, Cook CC, Lico SC, et al. Safety and efficacy of implementing a multidisciplinary heart team approach for revascularization in patients with complex coronary artery disease: an observational cohort pilot study. *JAMA Surg*. 2014;149:1109–1112.
7. Sousa-Uva M, Neumann FJ, Ahlsson A, Alfonso F, Banning AP, Benedetto U, Byrne RA, Collet JP, Falk V, Head SJ, et al. 2018 ESC/EACTS guidelines on myocardial revascularization. *Eur J Cardiothorac Surg*. 2019;55:4–90.
8. Holmes DR Jr, Mack MJ. Transcatheter valve therapy: a professional society overview from the American College of Cardiology Foundation and the Society of Thoracic Surgeons. *Ann Thorac Surg*. 2011;92:380–389.
9. Patel MR, Dehmer GJ, Hirshfeld JW, Smith PK, Spertus JA, Masoudi FA, Dehmer GJ, Patel MR, Smith PK, Chambers CE, et al. ACCF/SCAI/STS/AATS/AHA/ASNC/HFSA/SCCT 2012 appropriate use criteria for coronary revascularization focused update: a report of the American College of Cardiology Foundation Appropriate Use Criteria Task Force, Society for Cardiovascular Angiography and Interventions, Society of Thoracic Surgeons, American Association for Thoracic Surgery, American Heart Association, American Society of Nuclear Cardiology, and the Society of Cardiovascular Computed Tomography. *J Thorac Cardiovasc Surg*. 2012;143:780–803.
10. Nishimura RA, Otto CM, Bonow RO, Carabello BA, Erwin JP, Fleisher LA, Jneid H, Mack MJ, McLeod CJ, O’Gara PT, et al. 2017 AHA/ACC focused update of the 2014 AHA/ACC guideline for the management of patients with valvular heart disease: a report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines. *J Am Coll Cardiol*. 2017;70:252–289.
11. Scherer LD, Fagerlin A. Shared decision-making in revascularization decisions. *Circ Cardiovasc Qual Outcomes*. 2019;12:e005446.
12. Doll JA, Jones WS, Lokhnygina Y, Culppepper S, Parks RL, Calhoun C, Au DH, Patel MR. PREPARED study: a study of shared decision-making for coronary artery disease. *Circ Cardiovasc Qual Outcomes*. 2019;12:e005244.
13. Chhatrivala AK, Decker C, Gialde E, Catley D, Goggins K, Jaschke K, Jones P, deBronkart D, Sun T, Spertus JA. Developing and testing a personalized, evidence-based, shared decision-making tool for stent selection in percutaneous coronary intervention using a pre-post study design. *Circ Cardiovasc Qual Outcomes*. 2019;12:e005139.
14. Young MN, Kolte D, Cadigan ME, Laikhter E, Sinclair K, Pomerantsev E, Fifer MA, Sundt TM, Yeh RW, Jaffer FA. Multidisciplinary heart team approach for complex coronary artery disease: single center clinical presentation. *J Am Heart Assoc*. 2020;9:e014738. DOI: 10.1161/JAHA.119.014738.