How does the 'Heart Team' decision get enacted for patients with coronary artery disease?

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ABSTRACT

Objectives A heart team approach has been recommended for managing patients with coronary artery disease. Although this seems to be a new concept, we have been developing such a practice for over 8 years. In this report, the enactment of the heart team decision is reviewed and possible improvement is discussed.

Design Review of 1000 heart team decisions over a 1-year period for patients with coronary artery disease. These decisions were recorded contemporaneously at the time of the team discussion. Thereafter, patient's notes were reviewed 6 months following the heart team meeting to assess whether the decision was enacted and, if not, what were the reasons for aberration.

Results The heart team decision was enacted in 95.5% of patients. The reasons for aberration in the remaining 45 patients included patient's choice (refusal), unrecognised comorbidities at the time of the heart team discussion, change in patient's clinical condition requiring urgent intervention and death while awaiting procedure, among others.

Conclusions The decision of a well set-up heartteam meeting is carried out for most patients. Aberration is uncommon and usually due to unknown factors at the time of the discussion. The heart team approach ensures that patients receive best available care (most likely evidence-based), and demonstrates transparency.

INTRODUCTION

The concept of a multidisciplinary team (MDT) meeting for the management of patients with ischaemic heart disease (IHD) has been recommended by the ACC/AHA[1] and ESC/EACTS[2] guidelines. Although this approach is widespread in the management of cancer patients,[3] there has been no randomised control trial to prove its benefit. However, there is evidence in literature to support an MDT basis for patient management.[4–6] Patients are thus managed by an evidence-based approach and personal preferences, as well as local inconsistencies are ironed out.[7] MDTs also have an educational value[8] and allow for an auditing process if required. Most importantly, MDTs provide transparency in the decision making[9] which might be of invaluable benefit when there is an adverse outcome.

On the other hand, the management of patients with IHD has historically been primarily the responsibility of the cardiologist and encompasses optimal medical therapy, percutaneous coronary intervention (PCI) and coronary artery bypass graft (CABG) surgery. As PCI is relatively safe and has minimal impact on patient's postprocedural recovery time, there has been a hyperbolic expansion in the rate of PCI with significant geographical variation. Currently in the USA, the PCI:CABG ratio is 5.17:1 while in the UK it is 2.03:1.[10] Although, this may represent the patient's need and demand, there does seem to be a possible overuse of PCI as there is also a significant variation within the same region.[11] The use of an MDT, also known as a heart team, for decision making would promote an evidence-based practice.

In our Unit, heart team meetings have been held since 2005 on a twice-weekly basis with around 1200 patients (IHD and valvular disease) being discussed yearly. The set-up of these meetings has been previously described.[9] On average, there is at least one cardiac surgeon, one interventional, and one non-interventional cardiologist attending the meeting. Prior to the meeting, a coordinator ensures that appropriate information (patient details and comorbidities are completed on a paper proforma, angiogram films, echocardiography recordings (TTE or TEE), Dobutamine Stress Echo (DSE) etc) is available for the meeting.[9] The decisions are minuted on the individual patient's proforma sheet and documented in the patient's notes.

This study assessed the enactment of these decisions and explored the reasons for aberration.

METHOD

Contemporaneously completed data-sheet proformas of continuous patients (n=1000) who were discussed at the heart team meeting were reviewed. The meeting's decision was recorded. A time lag of at least 6 months from the MDT discussion was allowed to ensure that enough time had elapsed for carrying out the meeting's decision. Patient's records were then reviewed to assess whether the heart team decision was carried and, if not, what management regime was adopted. Reasons for aberration were also recorded.

RESULTS

During that period, after reviewing available clinical information about the patient and their respective investigations, such as angiography and echocardiography, the heart team decided for patients to undergo CABG in 29%, PCI in 32.7%, medical therapy in 19%, and for further investigation in 19.3%. The latter group consisted of pressure wire studies, Cardiac MRI (CMRI), DSE and post myocardial infarction clinic (PMIC) with ETT (exercise tolerance test).

On review of the patient's records 6 months later, it was noted that the heart team decision was carried out at an overwhelming majority (95.5%) (table 1).

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Table 1 Heart team decision grouped according to type of decision, and the actual adherence to the decision as per individual patient outcome

n=1000	Heart team decision	Actual procedure for patient
CABG, %	29 (290)	28.1 (281)
PCI, %	32.7 (327)	33.1 (331)
Medical therapy, %	19 (190)	18.4 (184)
Further investigations, %	19.3 (193)	18.3 (183)
Other, %	–	2.1 (21)

CABG, coronary artery bypass grafting; (n), number of patients; Other, patient refused treatment or did not attend or died, additional comorbidities, or test not possible; PCI, percutaneous coronary intervention.

For the patients recommended for CABG, such a procedure was not carried out in 17 patients. This was due to patient's refusal of the procedure in five patients (around 2% of CABG decisions). Other reasons for aberration included additional initially unrecognised comorbidities (8 patients) and further investigations requested by the surgeon (DSE) for two patients who were then treated medically. Two patients underwent emergency PCI to left anterior descending artery (LAD) while waiting for CABG.

As for the PCI group, only two patients did not undergo PCI; one patient refused the procedure and for the other patient, the attending interventional cardiologist felt that there was too much calcification within the proximal left main stem and LAD, and referred the patient for CABG.

In the group for which medical treatment was recommended, five patients were referred for further investigations, such as DSE and CMRI, and 2 patients underwent PCI. Finally, for the group where further investigations were recommended by the heart team, 2 patients did not attend their appointments, one patient died while waiting, 2 patients underwent emergency PCI, 7 patients were referred for CABG (instead of attending PMIC for assessment), 4 underwent a different assessment test (eg, DSE instead of CMRI) and for 4 patients the tests was not possible either because of pretest arrhythmias (DSE) or the patient could not lie flat (CMRI).

DISCUSSION

There is a recognised variation in the delivery of treatment for patients with IHD with some regions harbouring high PCI: CABG ratios.[10] Currently, as most of these decisions are not part of an MDT process, the professional body will find it difficult to justify such a service delivery. Hence a heart team approach as recommended by the American and European Societies,[1 2] will provide more transparency in the decision-making process.

Moreover, there is evidence that guidelines are not being followed when managing patients with IHD.[12–14] Hannan *et al*[12] reported that CABG was properly recommended in only 53% of patients while according to Chan *et al*[13] PCI in the non-acute setting was only appropriate in 50% of cases.

There is also evidence showing poor information and inadequate understanding about the procedures patients consent to, as shown by Baig *et al*,[11] Lee *et al*[15] and Rothberg *et al*.[16] These issues would be addressed if a heart team approach is used.

The concept of a heart team approach to cardiovascular care in the USA was recently reiterated by Holmes *et al*.[17] They promote the view that the goal of the heart team is to offer a balanced and complimentary approach to patient care by joint and shared decision making among the medical stakeholders, namely the interventional cardiologist and the cardiac surgeon. They conclude that the heart team should act in the patient's best interest, and that the patient should be offered a balanced view of risks and benefits so as to be able to make an informed decision.

Our data showed that the recommendation by the heart team for CABG and PCI is roughly equal, and that decision is reached following an evidence-based practice. It also showed that these recommendations are adhered to in the majority of cases. The group has also previously reported on the reproducibility of these decision-making processes.[9]

For those patients where the decision was not carried out, it would have been difficult for the heart team to have considered a different option as some of the factors are related to personal choices by the patients. However, in a few patients, the inclusion of a surgical scoring system such as STS Score or Euroscore as well as an angiography score (Syntax Score) could have identified a small number of high-risk cases, and maybe the heart team decision would have been different.

CONCLUSION

The heart team approach for decision making for patients with ischaemic heart disease provides a transparent process. When it is well set-up, its decision is adhered to in the majority of cases. Patient-informed decision, however, remains the final goal.

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