

***'Is it time to refresh the Heart Team? New paradigms for shared decision making'***

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## MCQs

1. The concept of the Heart Team:
  - a. Dates from the ISIS trials of thrombolysis
  - b. Was established to refine surgical decision-making
  - c. Arose in its early form from the Syntax trial
  - d. Evolved to allow Cardiologists to select patients for TAVI
  - e. Is well supported by randomized controlled studies

It was following the publication of the SYNTAX Trial (NEJM, 2009) that identified CABG was the standard of care for patients with three-vessel or left main coronary artery disease where the concept of a Heart Team arose. This Heart Team was able to give opinions about the risk/benefit of separate therapeutic options with the adoption of the SYNTAX scores where outcome was predicted by anatomical coronary artery and patient characteristics. The ISIS trials are some of the earliest trials in interventional cardiology but predate the adoption of the Heart Team. Although the Heart Team is able to refine surgical decision-making, it also helps refine percutaneous and transcatheter interventions. The Heart Team does allow Cardiologist to select patients for TAVI but it facilitates not only Cardiologist but also Cardiac Surgeons to select appropriate candidate for both modalities of aortic valve intervention. The concept of the Heart Team is not well supported by randomised controlled studies.

2. The advantages of Heart Team decision making are:
  - a. It allows physician autonomy
  - b. It enables the promotion of trans-catheter therapy
  - c. It always speeds up decision-making
  - d. It enables multidisciplinary input to a balanced consensus
  - e. It does not facilitate research

The greatest advantage of Heart Team decision making are the ability to collectively work with subspecialist to provide balanced, sensible, evidence-based decisions to minimise procedural risk and maximise patient benefit. It promotes a collegiate working style rather than isolated physician autonomy. It allows better patient and procedural selection regardless of modality of intervention rather than promotion of only trans-catheter therapy. Although the Heart Team concept can speed up decision making, it can also delay decision making if the system is inefficient. If done well, heart team decision making can facilitate creation of a research base and referral for enrolment in relevant clinical trials being undertaken.

3. The disadvantages of the Heart Team are:
  - a. It does not have consistent terms of reference
  - b. It allows patients to question decisions made about their care
  - c. It takes up too much time
  - d. It is more expensive
  - e. It discourages innovation

The lack of terms of reference in most Heart Teams is seen to be a major disadvantage to the current iteration and hence the need for refreshing it as a concept. A patient's ability to question decisions made about their care should always be part of good clinical practice and hence is usually an advantage of the Heart Team where the patients wishes can be considered in the decision making process. A well designed Heart Team system of care is aimed at being time efficient, not costly and will hopefully encourage innovation.

4. Patient factors that would sway a heart team to treat AS with sAVR include:
  - a. Good femoral access
  - b. Calcified valve leaflets
  - c. Presence of a permanent pacemaker
  - d. Porcelain aorta
  - e. Severe co-existent mitral valve disease

The presence of severe co-existent mitral valve disease will often sway the Heart Team towards surgical intervention so as to treat both valve pathologies simultaneously unless there prohibitive surgical risk. Good femoral access will reduce a transcatheter approach and hence be favourable for TAVI rather than sAVR. Annular and left ventricular outflow track (LVOT) calcification increases rupture risk from transcatheter approaches and hence a preference for sAVR. Calcified valve leaflets does not increase this risk and hence would still make anatomy suitable for TAVI. Presence of a permanent pacemaker does not alter choice on modality of AV intervention but does dictate percutaneous valve choices. A porcelain aorta can increase the risk of stroke during cannulation for cardiopulmonary bypass and hence typically a feature swaying away rather than towards sAVR.

5. To evolve with the changing trans-catheter landscape, a modern valve Heart Team should:
  - a. Never involve the patient
  - b. Be able to tailor therapy to each patient's needs based on clinical features and anatomy
  - c. Only treat AS with TAVI
  - d. Only perform procedures as part of a research study
  - e. Meet once a month

The principle of the modern valve Heart Team is the tailor therapy to an individual patient taking into account complex patient features such as age, comorbidities, frailty in addition to imaging guided anatomical factors. By doing so the Heart Team is able to decide on the lowest risk option. Decision making will evolve to include the wishes patient and the patient's carers. AS will not only be treated with TAVI and the decision will be based on presence or absence of adverse imaging guided anatomical features rendering the patient more suitable for either surgical intervention or in some instances medical therapy. Although the Heart Team approach lends itself to referral for participation in research studies, a majority of procedure will be performed outside of research. The Heart Team should meet to discuss patients as often as the valve service demand/referral requires; this is likely to be more often than once a month, particularly for a centre to be seen to have expertise in valve disease intervention.

6. The modern valve Heart Team is:
  - a. Now an outdated concept
  - b. No longer relevant now that the evidence base for TAVI is established
  - c. A system of care and the individuals that deliver that care
  - d. Not relevant to most patients with valve disease
  - e. Not as good as individual expertise

The modern valve Heart Team is now above and beyond a multi-disciplinary meeting but seen more as a system of care, including the individuals that deliver that care. It is now a modern rather than an outdated concept and has become more relevant in the face of established evidence for TAVI. The modern valve Heart Team should be seen as relevant for most patients with valve disease and seen to provide a better avenue for decision making and execution of care than an individual operator/physician can provide.