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The Great Debate
Left main in 2011: CABG or PCI?

'The Great Debate' gathered esteemed cardiologists and cardiac surgeons from around Europe at the EuroPCR congress in May 2011, ESC congress in August 2011 and EACTS annual meeting in October 2011 to discuss left main disease in 2011: CABG or PCI?

Confluence caught up with two of the discussants: Professor David Taggart, a cardiac surgeon from the UK, and Professor Andrejs Ērglis, a cardiologist from Latvia to find out more…

What did The Great Debate set out to discuss?

Professor David Taggart: In broad terms there are three potential treatments for left main coronary artery disease (LM-CAD). Optimal medical therapy forms the basis for the management of all patients with CAD, and for patients with mild disease, this is generally all they require. For patients with moderate or severe disease, additional management is required. The treatments available for these groups of patients are percutaneous coronary intervention (PCI) and coronary artery bypass grafting (CABG).

The choice between the use of PCI and CABG in patients with moderate or severe disease is controversial, with cardiologists tending to favour PCI, whilst surgeons prefer CABG. The Great Debate set out to investigate the arguments for and against each treatment, and to look for consensus on how best to manage these challenging patients.

Why is this a hot topic in cardiology?

DT: We can see that, for more than a decade, there has been quite a lot of controversy over what the best interventional treatment for CAD is depending on the pattern and severity of disease.

Professor Andrejs Ērglis: In the past, discussions about which was the preferred technique were sometimes not very scientific. However, nowadays, I think dialogue is much improved as we have more data to inform the discussions between surgeons and interventionists.

DT: What has emerged over the last few years is increasing evidence that, for patients with moderate to severe disease, CABG offers a survival advantage over stenting. What has really fuelled

the debate are the 4-year outcomes of the SYNTAX trial[1], which showed that, for around 80% of patients with three vessel disease, CABG is the best treatment as it offers a marked survival advantage. But what SYNTAX also showed was that patients with left main disease, around one third of patients with so-called lower or intermediate SYNTAX scores, seemed to do as well if indeed not better with stents than with CABG. That is what has really fuelled the controversy.

AĒ: I think we are always mentioning the SYNTAX study in this context as it was the first study where surgeons and interventionists worked together (the 'Heart Team' concept; fig. 1). As a result, discussion between these disciplines is not so much as competitors, but as colleagues. Whilst SYNTAX raised controversial questions, it also encouraged new ways of working. However, the data are really clear: PCI is not the solution for all cardiovascular disease. We need surgery, and respect between surgeons and interventionists is vital because we need each other's help. From competition between these disciplines, we are now moving to a much more complementary team.

DT: The key thing to understand about the debate is that it was focused only on patients with left main disease, so it did not include the vast majority (about 80%) of patients who have three vessel disease without left main disease. The reason the Debate focused on left main was due to the rather surprising results of two trials, SYNTAX and PRECOMBAT[2] from Korea. The latter showed that patients with, as I have said, lower or intermediate SYNTAX scores seemed to do at least as well with PCI as CABG, if indeed not better.

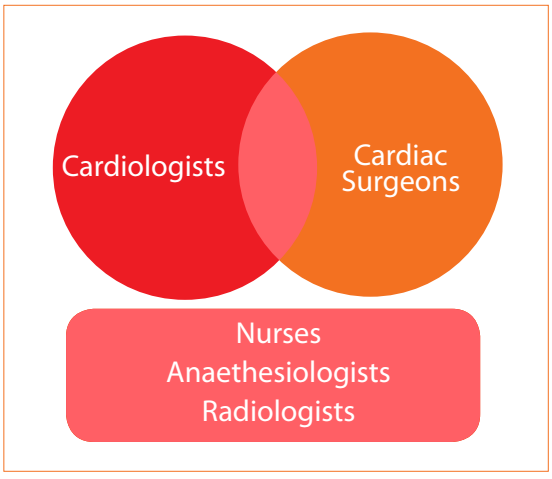

fig. 1

The 'Heart Team' concept, where cardiologists and cardiac surgeons supported by a wider multidisciplinary team, work together to determine the best management options for individual patients

Can you tell us about the format of the debate and explain who was involved?

DT: There were two groups of debaters; three surgeons and three cardiologists – all well-known internationally or in Europe. The debate was chaired by a surgeon, Gerhard Wimmer-Greinecker, who had to override his natural proclivity to support CABG!

AĒ: All of the panel were fantastic and intelligent discussants. There were really outstanding people involved. Gerhard Wimmer-Greinecker, one of the pioneers of robot surgery, was the chair. The surgeons included Lucia Torracca, a surgeon from Ancona, Italy. She was joined by Volkmar Falk, a surgeon working out of Zurich, and David Taggart, a well-known surgeon from Oxford, both of whom were authors of the recent ESC/EACTS guidelines on myocardial revascularization.[3,4] With respect to the interventionists, there was Marie-Claude Morice, a renowned interventionist, David Hildick-Smith from the UK, and myself.

We had to do some preparation work before the discussion and this was a very valuable exercise. It is easy for people at debates such as these to say, 'I like this, this and this', but here every point of the discussion was very well structured as a result of our pre-work and this led to excellent dialogues. Of course we can agree or disagree, but every point was concluded with a message from both the interventionists and the surgeons, meaning the debate was focused and productive.

Can you tell us a little about the key points of the discussions?

DT: What the debate was really focussing on were those patients with left main disease. We didn't discuss three vessel disease at all in the debate, because I think it is widely accepted that CABG is the definitive treatment for most of these patients. The debate focused on the one third of patients with left main who may do equally as well with PCI or CABG, or who may indeed be better served with stents than CABG if they have the so-called low severity patterns of left main disease.

AĒ: We discussed the data and evidence for each of the treatments, looking at efficacy and safety, current understanding, and guidelines.

DT: There was also debate around how strongly guidelines should be adhered to. Marie-Claude Morice, for example, the French cardiologist,

felt that guidelines were only a guide and you didn't necessarily have to follow them whereas I argued exactly the opposite. The key issue we were trying to dissect is what is best for the patients, and in determining what is best for the patient, we have to look to the guidelines. The advantage of following guidelines is: 1) they are a very transparent way of seeing how a decision was reached in the individual patient; and 2) they are also independent of the intrinsic prejudices that either the surgeon or the cardiologist may have. My own view is very strong: if you carry out an intervention on a patient in everyday clinical practice that doesn't follow guidelines, this intervention should not be paid for by anyone. There may be a legitimate reason why the guidelines do not apply in an individual patient, but then that should be picked up by the multidisciplinary heart team, so that it is obvious why you didn't follow guidelines in that patient. However, most patients should be treated according to approved guidelines and, as I have said, if you take that strategy then everyone can see how decisions were made in individual patients, so that an external observer who is not involved in the care of a patient would still be able to see very clearly how the decision was reached. Now one of the things that cardiologists often say is 'oh but we don't have time to discuss every patient in a multidisciplinary or heart team'. My argument would be, 'but you don't have to – if you are following approved guidelines, you don't need to discuss the patient; you simply follow the guidelines in most cases. The heart team approach is, however, very useful in cases where there may be a patient for whom, for whatever reason, you feel it is not appropriate to follow guidelines. If you look at the ESC Guidelines 2010, which were written by a combined group of surgeons and cardiologists, they made this point very clearly.

AĒ: We definitely need to follow guidelines; there is no question about that. However, we must remember guidelines really are guidelines. Guidelines tell us what is current best practice, but we should always be able to change guidelines. If you want to change guidelines, you must provide evidence as to why they need to change: this means that you can do something that is not included in guidelines in the setting of a clinical trial with a hypothesis to test. Without such testing, we can't make progress. Until you prove something, you can't change the guidelines. This is also the case if you look at efficacy and safety data. For example, interventionists might comment that surgery results in more strokes, whilst the surgeons say, 'yes, but in the PCI group you have many more reinterventions'. The question is which is the more important: stroke or re-intervention? We also need to understand that the patients are not homogeneous and that the answer to this question may vary amongst different patient groups. We can improve both strategies and we can see from these discussions that we, as interventionists, need to decrease restenosis rates and re-intervention rates. That is why I think it was such an important discussion, and is also why there is a need for further studies investigating how we should develop our thinking about surgery versus PCI in a range of patients. Studies such as the Scandinavian Baltic British NOBLE study are therefore really important.

DT: The EXCEL trial[5] is looking at patients with SYNTAX scores below 33, the very patients we debated in The Great Debate. SYNTAX was under-powered in that cohort of patients and therefore could not give a definitive answer to what the better therapy was in these patients. EXCEL started in September 2010 and I am delighted to say the first patient was enrolled in Oxford. SYNTAX showed that, for patients with scores of 33 and above, CABG is the best therapy for left main (which accounts for around two thirds of all patients). However, in the remaining one third of patients with left main and SYNTAX scores of less than 33, PCI seemed to do better than CABG. It is these patients that are now being recruited in the EXCEL trial. It is hoped the trial will recruit 2,600 randomized patients and have a registry of around 1,000 patients.

What were the key outcomes from the debate; was consensus reached between the two specialties?

DT: Both sides won. What we all agreed was that, for most patients with left main who have additional three vessel coronary disease, CABG is the best therapy. We also agreed that there is uncertainty in patients with less severe disease (SYNTAX scores <33).

AĒ: We need to treat more and more patients nowadays. If we look back ten years, we had patients with much more severe disease.

table 1

Recommendations from the ESC/EACTS guidelines for the use of CABG and PCI in patients with left main disease

Subset of CAD by anatomy	Favours CABG	Favours PCI
Left main (isolated or 1 VD, ostium/shaft)	IA	IIa B
Left main (isolated or 1 VD, distal bifurcation)	IA	IIb B
Left main + 2 VD or 3 VD, SYNTAX score ≤32	IA	IIb B
Left main + 2 VD or 3 VD, SYNTAX score ≥33	IA	III B

Adapted from Kolh et al. (2010)[3] and Wijns (2010)[4]
VD: vessel disease

Recommendation I A: Evidence from multiple randomized clinical trials or meta-analyses and/or general agreement that a given treatment or procedure is beneficial, useful and effective.

Recommendation IIa B: Conflicting evidence from a single randomized clinical trial or large non-randomized studies in favour of the usefulness/efficacy of the given treatment or procedure.

Recommendation IIb B: Conflicting evidence from a single randomized clinical trial or large non-randomized studies where usefulness/efficacy of the given treatment or procedure is poorly established.

Recommendation III B: Consensus of opinion of the experts and/or small studies, retrospective studies, registries that the given treatment or procedure is not useful/effective, and in some cases may be harmful.

Now we are catching patients much earlier in their disease and we can achieve more with optimal medical therapy. Also, the group of patients for whom surgery is suitable is unfortunately – or fortunately for the patients – becoming smaller, and with ever-improving surgical techniques, we are likely to see more hybrid operations requiring both specialties in the future.

DT: We didn't really reach a consensus for how to manage patients who have left main, but without other significant CAD. While the surgeons said that they believed that CABG was still the gold standard and the interventional cardiologists said that they thought PCI was a better treatment, we didn't really come to an agreement.

AĒ: We agreed physicians should follow the guidelines, and it's important that PCI is no longer red [not to be used] in the ESC/EATCS guidelines; we cardiologists wanted to say that left main is not in itself a contraindication for PCI.

How will this impact clinical practice?

AĒ: I am really happy we had the opportunity to discuss left main. Originally, the guidelines did not encourage the use of PCI, whereas now it is a yellow (evidence class II). I hope that eventually PCI will be a class I primary indication for left main. The concept of the multidisciplinary team is really exciting: of course one physician can't do everything, but with a team, we have a real-world model to help us realize optimal outcomes for patients. You don't even need to be together physically: a virtual team can be especially helpful in developing guidelines. For example, if you look at antithrombotic therapy, there are guidelines for neurologists, guidelines for cardiologists and guidelines for oncologists. To achieve the best outcomes for patients we need to have one set of guidelines. Recognizing the benefit of multidisciplinary working is really important and this is one of the aspects I enjoyed most in these discussions.

How will patients benefit as a result of this meeting?

DT: Well, you know, I think the most important thing about this is that the decision-making process for interventions should be taken out of the hands of individual doctors. When an individual doctor makes a decision to treat a patient there are too many potential conflicts of interest in a whole range of areas, and therefore I firmly and very strongly believe that all patients should only be treated according to guidelines as discussed previously.

AĒ: One of the key points from the debate was that discussions with patients and fellow physicians are really important. Some patients need to be treated immediately, however, with left main intervention, when the patient is on the table, it's not really time to ask them 'what do you want, PCI or CABG?' A patient can't understand how to make an informed decision if he or she is on the table! What we need is to provide, and I feel very strongly about this, is full information about the advantages and disadvantages of these two treatment strategies. To me, there is no question that this should be a priority.

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DISCLOSURES: The opinions and factual claims herein are solely those of the authors and do not neccesarily reflect those of the publisher, editor-in-chief, editorial board and supporting company. DT is an advisor to Abbott, Medtronic, VGS, Novadaq. AE has received grant/research support from Abbott Vascular, and consulting fees/honoraria from Boston Scientific, Cordis J&J.

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