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ESC/EACTS guidelines on myocardial revascularisation: interview with William Wijns and Philippe Kolh

- The collaboration between the European Society of Cardiology (ESC) and the European Association for Cardio-Thoracic Surgery (EACTS) was a rewarding opportunity for both societies
- A significant proportion of the guidelines focuses on the management of complex patients, such as those with comorbidities
- A clinically-driven, patient-orientated approach is encouraged at all times, and best results can be achieved through multidisciplinary working
- For each patient, it is important to consider whether they will benefit from revascularisation in addition to optimal medical therapy, and ischaemia must be present in order to warrant intervention
- Surgery used to be the only treatment for left main coronary artery disease (CAD); however, these guidelines recommend percutaneous coronary intervention (PCI) can also be considered for some of these patients
- It is important that patients are kept well informed regarding their treatment and that they are involved in the decision-making process, where appropriate
- The authors hope these guidelines will allow individual centres to agree and put in place standard protocols for each clinical subtype of patient

The recently released guidelines[1,2] stem from a first-time collaboration between the ESC and the EACTS. How has this collaboration enriched the resulting guidelines?

The collaboration between the ESC and the EACTS arose out of a desire to concentrate on clinically-driven, patient-oriented issues rather than simply to write an update on technical issues.

Out of the 14 chapters, there are only two that are technically oriented. The remaining chapters focus on how to use this knowledge and information to solve clinical problems. The guidelines therefore address the management of complex patients, such as those with comorbidities. Patients are becoming more and more complex, presenting with comorbid disease, be it kidney disease, other peripheral vascular disease, carotid disease or diabetes. Because of this, a significant portion of the guidelines discusses treatment strategies in these patients, clearly defining what we know and what remains unknown.

What did you set out to achieve when developing these myocardial revascularisation guidelines?

The key objective of these guidelines was to address the question that we, as physicians, face every day – yes, we can perform myocardial revascularisation, but should we?

With the progress in PCI techniques, both surgery and PCI are now a treatment option for many patients. The question is to determine who will benefit from which procedure, and what are the short- and long-term pros and cons? Both of these interventions have different risk profiles. Clearly it is important to minimise the individual's risk and achieve the best possible clinical outcomes. In surgery, the risk is obviously more acute, but after three months it drops significantly for a number of years until it may eventually recur when the disease progresses or if the saphenous vein was used as a bypass conduit. With PCI, often the risk of the procedure is lower, but there is always a risk of restenosis, stent thrombosis or recurrence. It is all about achieving the best result for each patient.

The importance of a patient-orientated perspective is emphasised in the guidelines. Can you elaborate on this?

It's not that previous guidelines haven't had a patient centred-approach; however, we wanted to emphasise the importance of the multidisciplinary "heart team" in patient care. We felt it was important to bring the clinical knowledge of surgeons, clinical cardiologists and interventionalists to the bedside. In many

cases, the choice of treatment for a particular patient is obvious, but in many, the choice is more difficult. When you have a complex call to make, obviously there is a benefit of discussing matters with a multidisciplinary team. This type of working is standard practice for the treatment of cancer and many other diseases. It is about time that we implemented the same strategy for revascularisation. There is no question that the solution proposed to a patient is more likely to be the best option if more than one doctor has looked at the file and discussed the optimal treatment approach. This goes beyond cardiologists and surgeons; to devise a treatment plan in some cases, we will need other medical specialists, such as an endocrinologist, a neurologist or an anaesthesiologist to give their input on the risks and benefits of the various options available.

The term "heart team" is not a new concept. It was first used in the SYNTAX trial,[3,4] which is the most contemporary randomised trial comparing surgery and PCI. In this trial, it represented a team including an interventional cardiologist and a cardiac surgeon. Many of the teams involved in the study said they enjoyed this collaborative process, that they had learned something from it and that, in the end, their patients benefited.

We hope the guidelines will help to promote the idea and benefits of multidisciplinary working internationally. We feel the idea of the heart team has been more commonly accepted in Northern Europe, whereas in Southern Europe, it has met more resistance. However, there are, of course, many exceptions to this rule. We need to be aware that these differences may be the expression of important differences in clinical practice and culture that we need to respect.

How does the current advice about the role of PCI *versus* coronary artery bypass graft (CABG) differ from previous guidance?

Before we consider the choice between PCI and CABG, the first question to ask is whether a patient will benefit from revascularisation on top of optimal medical therapy. Every coronary disease patient needs to have optimal medical therapy and, for a number of them, this may be sufficient. For others, revascularisation will also be necessary. We have made recommendations around that depending on anatomy and evidence of ischaemia. Recent trials, such as FAME,[3] have made it obvious that anatomy itself is not sufficient.

The concept that ischaemia must be present is new compared with the previous guidelines, and that is why we have a chapter on both non-invasive and invasive diagnosis of ischaemia. If you cannot prove the presence of ischaemia or don't have the data to hand from non-invasive testing, fractional flow reserve (FFR) can be used. FFR measurements play an important role here, because in many instances we do not have objective evidence of ischaemia prior to revascularisation, particularly for PCI for multi-vessel disease. You may have objectively proven ischaemia in the patient, but that does not mean that all the vessels need to be treated. That is the first question – should the patient be revascularised at all?

The second question is about the best approach for the treatment of CAD – PCI *versus* CABG. Here we have attempted to incorporate the latest data, including SYNTAX.[2] We only had the 2-year data for SYNTAX at the time we wrote the guidelines; fortunately our recommendations are also consistent with the 3-year data.

Until recently, surgery was the only treatment used for left main CAD. However, the SYNTAX data opened the door for treating left main patients with PCI, particularly those with a low SYNTAX score. Of course surgery remains a good procedure, but we are recommending that PCI should be considered for ostium/mid-shaft left main CAD in stable patients, with either isolated left main disease or with left main disease associated with one-vessel disease. Furthermore, we are recommending that PCI should also be considered for "simple" three-vessel disease lesions, more precisely for lesions with a SYNTAX score <23. It should be noted that the term "should be considered" is pretty strong and means that these cases should be discussed, while in the past, in principle, they would have automatically been interpreted as an indication for surgery.

Has the guidance about the use of manual thrombus aspiration during primary PCI changed?

In patients who have an occluded vessel, the level of evidence has been upgraded to IIa A for manual thrombus aspiration. This means that it is not a default strategy, but it should be considered, as its use is not only supported by a single large trial, but also meta analyses with good outcome data. FFR has also been upgraded, to I A, owing to the results of FAME[5] and the long-term DEFER study.[6]

What about the guidance on the role of drug eluting stents (DES) and balloons? Has that changed at all?

We have not really made many changes to this guidance. We have updated the list of the DES with good data, be it clinical or angiographic. We still have some reservations about the use of DES in subsets of patients, such as those with acute myocardial infarction (MI). Therefore, the recommendation is that, if a patient has a high risk for restenosis, DES should be used preferentially, that is to say, in patients with small vessels or long lesions, or in patients who have been shown to benefit the most from this approach, such as those with diabetes.

When you look at the different DES, is it correct to say that there wasn't any evidence to differentiate between them?

Yes, but it depends on the comparisons, because not all of the brands have been evaluated together. At the time we were writing the guidelines, data suggested that the XIENCE-V everolimus stent (Abbott Laboratories) shows some superiority compared with the paclitaxel TAXUS stent (Boston Scientific). However, it is important to note that the everolimus stent is a more recent generation device than the paclitaxel device. These findings are reflected in the text.

For the rest, if you look at clinical outcomes, we have to admit that there is no robust evidence in favour of one device or another. We will have to wait a little longer for follow-up studies to give us those data. Ultimately, all of the available stents are different; they have different features and data. However, if you look at these stents in terms of their outcome data in patients with MI, there is no robust evidence supporting a difference between them. Again, this all comes down to the patient-oriented approach and the fact that one size doesn't fit all. It is about selecting the right strategy for the right patient.

How do you expect these guidelines to impact on real-life clinical practice across Europe?

Things will not change overnight, but hopefully, in 10 years time, we will look back and clearly see the impact these guidelines have had on clinical practice. We need a lot of patience; we need to wait and go to national society meetings, medical journals, even patient groups, to make sure that, first, the guidelines are read, secondly, understood and, thirdly, used to guide clinical practice. Individual centres need to agree and put in place standard protocols for each clinical subtype of patient – the new ESC/EACTS guidelines will provide the necessary foundation on which to build these standard protocols.

What is the key take home message for readers?

First, it has been a rewarding opportunity for both the EACTS and the ESC to collaborate on this project and to be able to "deliver the baby" together, so to speak. We hope that this is just the first step towards larger, broader and deeper collaboration at the society level. And secondly, for the patients, whenever possible, especially in the case of chronic clinical presentation, the inclusion of both the patient and different medical specialists in the discussion is crucially important. Although it may not be reality across the board, the guidelines show that opinion is moving towards involving the patient in the decision-making process, where appropriate, and providing optimal patient information. We are also heading towards a much greater role for the multidisciplinary team. As the ageing of the population increases the complexity of the clinical problems we are facing, we can gain added value by using the multidisciplinary approach to revascularisation.

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