

# A major step forward: Guidelines for the management of cardiac patients for non-cardiac surgery - the art of anaesthesia

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In this issue the Journal presents *Guidelines for pre-operative cardiac risk assessment and perioperative cardiac management in non-cardiac surgery*.<sup>1</sup> We boldly consider this a new starting point for the Journal and also for the European Society of Anaesthesiology (ESA) in presenting scientific guidelines. It shows the present evidence (and lack of evidence) in this field that is so important for the specialty. Anaesthesiologists in Europe are confronted with a long series of guidelines in their respective countries. The European guidelines should not overrule the national ones but should be seen as a help to create harmonization of practice.

Reduction in perioperative mortality is based on quality of perioperative care. Recent evidence suggests that a predefined check list may be helpful to reduce perioperative complications.<sup>2</sup> Mortality in the perioperative period depends not to the absolute number of complications but the ability to treat complications in the perioperative period in individual centres.<sup>3,4</sup>

The present guidelines evolve from American inspiration. The American Heart Association (AHA) and the American College of Cardiology (ACC) with the support of Society of Cardiovascular Anesthesia (SCA) have produced guidelines on cardiac patients and non-cardiac surgery.<sup>5,6</sup> These guidelines have been valuable but they are coloured by the American health system which in many ways is different from what is dominant in many European countries.. The lack of proper European equivalent guidelines prompted the European Society of Cardiology (ESC) to take the lead focusing mainly on the preoperative evaluation and treatment. However, the ESA played a role as endorsing partner.

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## Ethical perioperative questions: to operate or not to operate?

All current guidelines discuss the evidence on how the patient should be evaluated and/or best assessed and prepared for surgery. Caregivers will on the other side, increasingly be reminded that additional testing of the patient is only relevant if they may lead to substantial alterations of perioperative management. If this turns out not to be the case, the rationale for additional testing should be questioned. Along the same lines is the interesting question of who should – at a certain point in the pre-operative trajectory – in close cooperation with the patient - decide whether or not the surgical intervention should be performed. The decision is not only a surgical one and should be based on knowledge of risk but also on the close knowledge of the individual patient, the planned procedure and also of alternative procedures.<sup>7–9</sup> Whether the anaesthesiologist - if concerned by the risk – should start a discussion on surgical options and/ or eventually recommend to avoid surgery, has not been addressed. Of course, this is an issue that can not be solved by prospective studies. Neither is the topic suited for recommendations or guidelines. However, with the ageing of the population ethical questions will gain importance and should be discussed by those who care for the patients in the perioperative period. The increasing burden that expensive technical investigations put on social health care systems will oblige us to consider this aspect of the preoperative management of the patients in the near future.

## Perioperative beta-blockade

It is important to note that views and recommendations on specific issues may change over time when more evidence on the subject is gathered. The representative example of this phenomenon is recommendation on perioperative use of statins and of beta-blocking therapy.<sup>10</sup> Perioperative beta-blockade has been done for more than 30 years to reduce surgical stress. The papers of Mangano and co-workers<sup>11</sup> and Poldermans and co-workers<sup>12</sup> led to enthusiasm despite the heavy criticism of both studies. When larger studies including the POISE trial showed no effect or even worse outcome with beta-blockade, the tide seemed to turn.<sup>13,14</sup> However, pertinent questions about the appropriate dosage and the up-titration were put forward challenging the conclusions. Despite the large number of patients recruited in the POISE trial, the relevance of and possibility to generalize definitive

findings from such a study depends on the questions asked, the adequacy of the protocol and resulting management. POISE has definitely not answered all questions.<sup>15</sup> The task force producing the current guidelines had the published material available and thus, the conclusions on beta-blockade are reasonably balanced.<sup>1</sup>

The main message from the Guidelines is that medication with beta blockers: a) should not be stopped preoperatively; b) is recommended to high risk patients; c) low and intermediate risk patients should not routinely be subjected to beta-blockade. An important point is that especially when heart failure has not been excluded, the beta-blockade should be started slowly; preferably over a period of 4 weeks.<sup>16,17</sup> The question will rise whether this is possible in routine practice. In our opinion it might. However, it requires a close cooperation between surgeons, cardiologists and anaesthesiologists. Many of these patients come for planned surgery and they will be seen by surgeons well in advance. This is also a time where a preoperative anaesthesiological visit can be organized. In this respect the guidelines encourage countries and clinics where such systems are not in place, to explore the possibility since the use of preoperative anaesthesia clinics is a well established practice. The guidelines discourage the preoperative initiation of beta-blockade if such systems are not in place.

### **Intraoperative management**

An important part of perioperative patient care resides in the possible impact of intra-operative patient care on the outcome.<sup>18</sup> However, strong evidence remains to be gathered of the influence of intra-operative anaesthetic management on short and long-term postoperative outcome. For instance, while epidural analgesia is generally considered a valuable tool in the perioperative pain treatment it remains to be proven that the treatment positively affects perioperative morbidity and mortality.<sup>19–23</sup> The increasing preoperative use of anti-platelet and anti-coagulant drugs will interfere with the possibilities to freely apply neuro-axial techniques. It is mandatory to realize that the choice of anaesthetic techniques will influence the potential for starting and / or continuing anti-coagulant therapy. Thus, the anaesthesiologist is required to consider his/her work in the context of the total perioperative course. Further, the important question of fluid management has not resulted in specific recommendations due to the combination of conflicting and lacking evidence.<sup>24,25</sup>

### **Postoperative pain relief**

Adequate postoperative pain relief is of extreme importance to improve the comfort of patients after surgery. However, there are no studies that can lead us to the optimal type of drug or modalities of administration.<sup>26,27</sup> Further studies are warranted to better define the role of pain treatment to minimize perioperative morbidity and

mortality. The individual skill and the knowledge of the patient, the perioperative setting and the type of surgery must be integrated in the patient plan.

### **The importance (lack of) of perioperative respiratory interventions**

Several studies have shown that postoperative pulmonary complications are associated with worse outcome.<sup>3,28</sup> However, there has been conflicting evidence to which degree preventive measures have been effective, a fact which is mirrored in the Guidelines. However, there are studies reporting effectiveness of early application of non invasive continuous positive airway pressure in presence of acute lung injury.<sup>29</sup>

### **The need for evidence in perioperative management**

A most striking finding has been the lack of evidence-based results in perioperative anaesthesiological management. The importance of these issues stresses the need for large studies with uniform methodology. The anaesthesiologists being the generalist of the hospital and are in most countries involved in the total perioperative care. With the ESA having evolved as the leading organization for anaesthesiologists in Europe it should take its natural place in defining areas where guidelines should be made and the important scientific questions asked. Cardiology has had a pivotal role in giant multicenter studies on treatment of different diseases in their field. There are important differences between perioperative management studies and studies of long-term effects of a drug. The confounding factors such as the skill of surgeons and anaesthesiologists, the perioperative management and surveillance make “our” studies difficult. However, it can be done and there is an urgent need for European anaesthesiology to take the lead. The set-up of multicenter studies should determine the effects of different perioperative anaesthesiological interventions. In this line the ESA alone or in co-operation with other European societies involved in anaesthesiology and perioperative medicine could play a relevant role in:

- identifying and pursuing the important challenges in the perioperative medicine.
- providing a united view on comprehensive strategic plans at European level with an overarching and credible body of reference with scientific excellence.
- promoting European research plans with sharing information and expertise.

Already there is a close co-operation between the ESA and the section for Anaesthesiology within the UEMS. We consider it essential that ESA continues this tradition and expands the co-operation to other societies that work in fields related to ours in order to avoid a multitude of contradictory guidelines coming from different European organizations. The ESA should therefore be

inviting and open to suggestions and external participation.

## Conclusion

The practice of anaesthesiology consists of both science and individual skills in patient handling. The guidelines are important to harmonize clinical management based on evidence. We believe and hope that the presentation in the Journal will be a starting point for continued collection of evidence to support the practitioner in the quest for solid base for optimizing patient management. This will help improving *the art of anaesthesia*.

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