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Editorial

Beyond survival

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Organ transplantationsaves a large number of lives and at the same time improves the quality of life of many more. However, a great discrepancy remains between the number of organs available and the number of potential recipients awaiting an organ transplant.

In Scandinavia, the number of realised deceased donors has been stable around 12–17 per million inhabitants, apart from Norway where the frequency has been as high as 25 per million inhabitants in recent years (Fig. 1). The constant lack of donors has renewed the interest in non-heart-beating donation (NHBD) as a means to diminish the waiting lists. In Scandinavia, the use of NHBD is not yet performed as a standard procedure (http://www.ont.es/publicaciones/Documents/Newsletter2011.pdf), but programmes are in the pipeline in several hospitals.

In the 70s, the use of NHBD was the only acceptable way of performing organ donation. With the acceptance of the whole-brain-death concept, the number of heart-beating, brain-dead donors (BDDs) increased, thereby enabling transplantation of vital organs. The increasing need of organ donors, and at the same time newer and better techniques for organ preservation, has led to a renewed interest in NHBD. In the present issue of the journal, Tazarourte et al. present data on extended exploitation of the available organ donor pool by transferring out-of-hospital cardiac arrest victims by helicopter to the hospital to be cared for on extracorporeal life support (ECLS) either with a therapeutic aim or for organ donation purposes.[1] The endeavor is carried out in accordance with the French legislation within the field, as a 2005 law allows organ retrieval from non-heart-beating patients.[1] According to the authors, 'Physicians do not need approval from the relatives to consider a patient for "potential organ donation," but approval is always required before actual organ donation. Moreover, when relatives are present on the scene, they are informed and their consent is needed before patient transport to the hospital'.[1]

The French approach with inclusion of non-heart-beating donors has without any doubt increased the number of realised deceased donors, and a similar recruitment have been observed in Spain and Italy.

There is no doubt that the lack of organs is just as evident in the Scandinavian countries, however, the question is if a similar approach is likely to be implemented paying due respect to the ethical issues both among the health professionals, patients as well as relatives in the Scandinavian populations. Later, a short description of some of the ethical considerations is given, which need to be considered when trying to apply NHBD as a new strategy within this field.

First of all, it seems worthwhile to differentiate among the various categories of organ donation after cardiocirculatory death. According to the Maastricht criteria, four types of donation after cardiocirculatory death can be described: (1) dead on arrival; (2) unsuccessful resuscitation; (3) cardiac arrest awaited after withdrawal of life support in patients who are not brain dead and (4) cardiac arrest after brain death. Apart from (3), the remaining categories are described as uncontrolled.

The vast majority of organ transplants in Scandinavia are currently done by using BDD or living family member donation (i.e. kidney transplants). The organ donation process with BDD patients is carried out with minor differences between the Nordic countries as some countries have a legislation with presumed consent, whereas other require

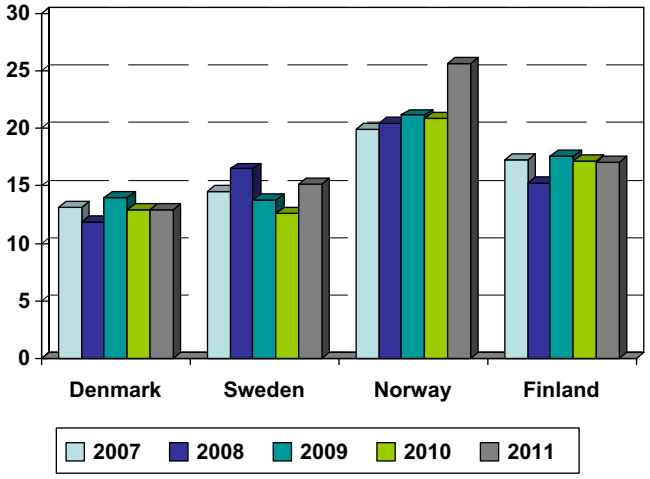

Fig. 1. Number of realised deceased donors per million population per year 2007–2011.

informed consent before the organ donation can proceed. However, in all cases, it is the treating physician who will inform the relatives about the possibility of organ donation from the deceased patient. The physician will most likely already have been involved in treatment of the patient during the progression to brain death and the family has gained confidence during the process of accepting death as irrefutable.

In order to secure a positive attitude and consent for organ donation, it is of great importance that both the population in general and donor families, when confronted, must have absolute confidence that life-saving treatment has been prioritised and survival of the patient is no longer a possibility. The time factor is an important issue, in this respect, when differentiating between BDD and uncontrolled NHBD. In BDD, the family has witnessed the clinical team trying to resuscitate and stabilise the patient over an extended time period, and after brain death has been certified and all further treatment is futile, the physician in charge approaches the family to inform or obtain consent to perform organ donation. This approach, with the treating physician serving both purposes, has been chosen in the Scandinavian countries. In uncontrolled NHBD, the limited time available to run through the process from trying to save the patient, to consider the patient as a potential organ donor, initiate organ preservation and finally inform or obtain consent from the family to perform organ donation is significantly compressed in comparison.

The potential conflict of interest for the treating physician is obvious. The key issue in this respect is: when can further treatment be deemed futile in case of cardiovascular death? According to the Maastricht protocol, 10 min with no-touch is required to establish cardiac death.[2] However, the timespan varies between countries with anything between 2 and 20 min,[2,3] reflecting the uncertainty of the timespan when auto-resuscitation may take place (Lazarus phenomenon). However, in practical terms, it is not the timespan that poses the most important concern – but more importantly for the treating physician, it may be difficult to establish, when someone has passed the point of no return, and further treatment is futile, before withdrawing the life support. Can we identify markers indicating that further resuscitation is pointless – or is it sufficient that the likelihood of success is extremely limited? When is the right time to stop the mechanical compression? With the introduction of mechanical chest compression devices, we have experienced survival in patients who previously were declared dead before arriving to the hospital.[4] Having said that, we also have to acknowledge that the outcome after out-of-hospital cardiac arrest still carries a grave prognosis, which is clearly reflected in the outcome of patients transferred to hospital with a therapeutic aim of ECLS in the paper of Tazarourte et al. in this issue as well as others.[1,5]

The French approach clearly acknowledges the problem of identifying futile treatment by introducing the time limits for differentiating between ECLS for organ donation or with a therapeutic aim paying due respect to the time with low-flow during the initial cardiac arrest. However, this approach shortens the time available for information about organ donation and ensuring consent (if needed) and challenges the pre-hospital doctors and the family members (if present) to make the decision prior to take off from the accident site. In the group transferred with the aim of therapeutic ECLS, one patient is later declared brain dead and becomes a BDD. The fact that none of the patients in the group of therapeutic ECLS is included in NHBD probably reflects the challenges of deciding when treatment is futile in this patient group where both cardiac and brain function are supported by the ECLS intrinsically.

In conclusion, the number of patients listed for organ transplantation is still increasing, leaving the number of organs available far from matching the number needed. The French approach, which is also applied in other southern European countries, is one way of approaching this problem. Before a similar programme is introduced in the Scandinavian countries, we believe it is crucial to discuss

some of the ethical challenges associated with implementation of NHBD, both among health personnel, but just as important a discussion of how it will be perceived among the populations in Scandinavian countries.

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