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Extracorporeal life support, ethics, and questions at the bedside: how does the end of the pathway look?

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If there were machines bearing the image of our bodies, and capable of imitating our actions as far as it is practically possible, there would still remain two most certain tests whereby to know that they were not therefore really men.

Renè Descartes 1596–1650

Experienced intensivists, cardiologists and perfusionists come together at the bedside of a 75-year-old patient on extracorporeal life support (veno-arterial ECMO). This patient has had ‘successful’ resuscitation after myocardial infarction and now has a beating heart and cannulae in situ. There are moderate signs of brain hypoxemia, increasing bilirubin, compromised renal function, and sustained pressor dependence over the past week. The patient remains too unstable to wean from ECMO. We are at a loss with therapy and also perspective. Is the goal quantity of life or quality of life? Have we interrupted the biological process of dying with extracorporeal machines (according to Renè Descartes)?

The increasing advocacy and use of extracorporeal life support (veno-venous ECMO for severe lung failure,

veno-arterial ECMO for cardiac arrest) has led to a new level of technology to maintain biological function and living. We know many patients surviving life-threatening trauma, hypoxemic ARDS or cardiac arrest finally finding their way back into a social living: we are happy to see them when they bring cakes and chocolate to the ICU. On the other hand, we stand at the bedside of our 75-year-old patient with multiple organ dysfunction. Most experts and faithful doctors know that this is a situation very unlikely to result in recovery but ending up in protracted illness with persistent restriction in daily living, and may be death soon after the patients leave the protective care of the intensive unit or health care system. The wishes and values of the patient in such an ethical-burden critical situation (“Do I want to have stopped the dying process by extracorporeal technique if recovery to ‘normal’ life is unlikely?”) are not explorable. The family believes in a wonder, or they are over-optimistic, maybe triggered by us (?), by the newspapers or by the internet. Some nurses feel that stopping the ECMO might be a kind of ‘assisted dying’. The question may come up “why is it that it is so hard to die now?” Is it that we have to exhaust all technologies before this is OK? The cost may be enormous suffering and a very traumatic death for the patient and the family.

Nevertheless, ECMO techniques are applied as bridges to recovery often under critical circumstances requiring a rapid decision. Naturally, most decisions will be made in direction of life, and who is able to withhold such a new ‘attractive’ technology without ethical pain? But, later on, only the patient’s progression on the ICU will discover whether or not the indication for ECMO was adequate.

Nowadays, the complete arrest of the heart or the lung must no longer be death, since an artificial circulation can transport oxygen to the body. The identification of the margins of human viability has left a precisely defined terrain, and modern medicine anthropology is about to leave the Kantian view of an autonomous self-reflecting

individual in favour of a primary maxime: survival—whatever the cost. We feel the latter is not correct.

In recent years, some helpful and accurate scores have been presented to assess the probability of survival with extracorporeal life support, using multivariate analysis of comorbidity, the history of lung or cardiac failure, and additional organ dysfunction, all fantastic for the scientist or epidemiologist! But did we as clinicians learn how we could use these scores and knowledge to support our round at the 75-year-old ECMO patient? The answer is: no! Medical and ethical considerations pondering viability against a responsible, reasonable and prospectively beneficial clinical decision are behind the dramatic development of the technical advances of extracorporeal cardiopulmonary organ assist, as well as the clinical use of these techniques.

Our round of experienced experts at the bed of the ECMO patient may be at a loss: is it life, death or a situation in-between? Is ECMO a bridge to recovery, a guarantee of a status quo, or just prohibiting dying? These situations will never be 'pressed' in guidelines or algorithms; however, our view needs to be directed in these reflections, and we need to develop strategies that address these questions.

For our 75-year-old patient, the round must now decide: is the continuation of ECMO reconcilable with the

dignity of man or a unique personality, an older gentleman who has spent a unique life with his dreams and his disappointments? The round may reflect all aspects of medicine facts and perspectives, but they need to come to a medical decision, and even the decision to change nothing is a decision. In modern medicine, to do something or to abstain from doing something should be based on a normative moral basis, but philosophy can communicate with us only in the abstract. At the end of the day, we are left alone with our own 'common moral'. However, there should be a method of finding a solution for the individual patient and for his dignity in a sensible and faithful way if we understand that the medical perspective is not the only one that needs to come to a decision. In fact, an integrative approach involving, e.g., the people who are caring for the patient at the bedside, the relatives as well as friends who are closely related to the patient and may at best know what would be the patient's decision, plus the medical perspective combined with a clearer understanding of risk stratification and longer-term outcomes in these patients, may shed some light at the end of the tunnel.

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