7. Education

In the field of ECLS, there should be minimum requirements in education and experience to run an extracorporeal circulation system. The ECLS systems should be applied as a team work between physicians who have the medical responsibility (including the ability to cannulate the patient, set up all necessary monitoring systems, and the ability to cope with all potential complications immediately) and perfusionists who have the responsibility for the extracorporeal circulation. The use of ECLS systems should be limited to these occupational groups.

ECLS systems need specific medical and technical knowledge in extracorporeal circulation (ECC). There are different previous experiences in cardiovascular engineering for physicians and even for perfusionists. However, it is agreed upon that physicians operating an ECLS system have to have proven experience in (a) indications and contraindications, (b) cannulation of various arterial and venous vessels for immediate start of the ECLS, (c) handling vascular complications secondary to cannulation procedures, (d) techniques avoiding peripheral ischemia after cannulation, (e) various methods to decompress the right and left ventricle, and (f) all monitoring parameters to avoid severe complications such as cerebral hypoxia, myocardial damage, etc.

Perfusionists have to have experience in more than 100 ECC perfusions and more than 2 years of practical experience in perfusion during cardiac surgery procedures.

References


Appendix A. Members of the ECLS Working Group

Andreas Beckmann, Berlin, Germany
Christoph Benk, Freiburg, Germany
Friedhelm Beyersdorf, Freiburg, Germany
Peter Feindt, Dusseldorf, Germany
Gerd Haimerl, Villingen-Schwenningen, Germany
J. Michael Hasenkam, Aarhus, Denmark
Roland Hetzer, Berlin, Germany
Pieter Kappetein, Rotterdam, The Netherlands
Frank Merkle, Berlin, Germany
Carlos Mestres, Barcelona, Spain
Pieter Muneretto, Brescia, Italy
Peter Fast Nielsen, Aarhus, Denmark
Claudio Murer, Barcelona, Spain
John Pepper, London, United Kingdom
Jose Pomar, Barcelona, Spain
Ludwig von Segesser, Lausanne, Switzerland
Alexander Wahba, Trondheim, Norway

Editorial comment

Position paper for the use of extracorporeal life support in adult patients

Keywords: Assisted circulation; ECLS; Cardiogenic shock

The article entitled ‘Position paper for the use of extracorporeal life support in adult patients’ [1, in this issue] is an excellent contribution to clarify the indications, contraindications, management and educational issues on one of the earliest techniques of circulatory support ever available easily in every cardiac surgical department. Major
The second issue, opened for discussion, is related to the respective indications of the extracorporeal membrane oxygenation (ECMO) support and bi-ventricular assist device (bi-VAD) therapy. The first technique is easy to use and not too expensive in terms of equipment, but the patient remains in a situation requiring, for a prolonged period of time, highly specialized care. Finally, the method does not totally stop the clock and management of the patients after few weeks may become a real challenge. The second technique is more expensive and less easily available, but it offers more chances for a rapid recovery of the various organ dysfunctions and, in any case, a faster recovery of the general condition. Better venous drainage, optimal pulmonary decompression, higher flow rate, and pulsatility have been shown to be critical parameters for success in the most severe circulatory deterioration. There are many situations where the selection of the most optimal device is not too difficult: every situation when recovery of the native cardiac function is likely to occur within few days on one hand and cases of primary cardiogenic shock complication of a massive myocardial infarction or acute decompensation of a chronic cardiac failure in a patient unlikely to be easily transplanted on the other hand. Between these two extremes, there is a large “gray zone” where selection is difficult. The compromise which has been proposed, the use of the ECMO procedure as a ‘bridge to the bridge’, may finally induce the risk of two additional risks: a huge burden on the medical and nursing staff and a reduced chance of overall success for the patient.

These comments lead to proposing a multicenter trial comparing ECMO and bi-VAD therapy in identical groups of patients. The results of such a study would allow a more precise and effective selection of the optimal technique in the various patient populations. The multinational collaboration on the study of ECMO, which makes the substance of the present article, would find a quite interesting prolongation.

Reference


Daniel Y. Loisance*
Institut de Cardiologie, Hôpital de la Pitié Salpêtrière, Boulevard de l’hôpital, 75013 Paris, France
*Corresponding author. Tel.: +33 6 07 68 09 41
E-mail address: daniel.loisance@wanadoo.fr

Available online 6 July 2011
doi:10.1016/j.ejcts.2011.05.059