Aortic arch surgery: beyond surgical technique alone

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Yan et al. [1] need to be congratulated on forming an international aortic arch study group to improve patient outcomes after aortic arch surgery.

Clinical consensus to classify the different temperatures utilized for hypothermia is obviously important; however, it does not take into account metabolic variation between patients [2] and may potentially explain variation in reported outcomes.

With regard to cerebral perfusion factors, ARCH project I—retrospective database, such as hypothermic circulatory arrest with/without retrograde cerebral perfusion, with/without selective antegrade perfusion or moderate hypothermia with selective cerebral perfusion are clearly important factors with regard to cerebral outcomes. Similar surgical and cerebral perfusion techniques may yield differing outcomes due to variation in cardiopulmonary bypass perfusion pressures, perfusion flows, temperature profiles, haematocrit variation and glucose management.

Most perfusion variables vary over the duration of the surgical procedure (for example, haematocrit), so continuous data recording is needed (minimum, maximum mean or median would result in errors). With the advent of electronic perfusion recording systems, we recommend that the ARCH projects embrace the perfusion standards of reporting trials (PerfSORT) concept (www.perfsort.net), a free electronic system that allows the continuous recording of blood pressure, temperature, glucose, lactate and haematocrit for all cases involved in a study (classified as Tier I data).

Cardiopulmonary bypass equipment such as pump type, tubing, oxygenator model, heparin management are also recordable on the PerfSORT system (classified as Tier II data).

The patient data stored in PerfSORT is anonymous and freely downloadable allowing the saving of pages of continuous perfusion-related data to be printed in journals [3], for example http://www.perfsort.net/study_detail.asp?id=49 [4]. PerfSORT is endorsed by the International Consortium of Evidence-Based Perfusion (ICEBP), the Society of Clinical Perfusion Scientists of Great Britain and Ireland (SCPSGBI) and the American Society of Extracorporeal Technology (AMSECT).

Inclusion of perfusion data via PerfSORT may help the future analysis of the ARCH project II—randomized trials and ARCH project III—prospective registry to determine the optimal cardiopulmonary bypass technique and parameters, as surgical techniques alone may not be the complete solution.

Conflict of interest: Michael Poullis is a founder member of PerfSORT.

REFERENCES