Does Simultaneous Lower Body Perfusion During Aortic Arch Repair With Circulatory Arrest Improve Patient Outcomes?

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Circulatory Arrest

• Moderate hypothermic circulatory arrest (25–28°C)

Does a whole body perfusion strategy during aortic arch surgery under moderate hypothermia improve patient outcomes and reduce metabolic derangement and lengths of stay?
Methods

Arch Recon with Circ arrest
n = 149

ACP alone
n = 48

Whole Body Perfusion (A+B/C)
n = 101

• Retrospective review of prospectively collected data
• All consecutive patients undergoing aortic arch repair with circulatory arrest (including hemiarch and total arch)
• Single centre, single surgeon

• Primary outcome
  • 30d/in-hospital mortality
  • ICU and hospital length of stay
  • Metabolic recovery

• Secondary outcomes
  • Stroke, spinal cord injury, renal failure, any of 9 major complications
Results

• No significant difference in 30-day/in-hospital mortality, stroke, or renal failure

• WBP group had a significant reduction in serum lactate at ICU admission and a reduced time to lactate normalization

• WBP group showed a trend towards earlier ICU discharge (p=0.06)
Discussions/Conclusions

• **Addition of lower body and visceral protection**
  - Hyperlactatemia 6 hours after ICU admission is an independent risk factor for complications after cardiac surgery (Hajjar 2013)

• **Whole body perfusion strategy appears to be associated with good patient outcomes in complex aortic reconstruction under moderate hypothermic circulatory arrest**
  - No increased risk of post-operative complications
  - Lactate levels normalize more quickly with WBP
  - WBP is associated with reduced ICU length of stay