What is the optimal perfusion?

Odense 31 oktober 2009
Else Nygreen
Practical Knowledge

- On the job-training
  - Self-study
  - Caseload
  - Sharing knowledge
  - Evaluation
  - Clinical research
  - Innovation
  - Context knowledge

Evidence Based Knowledge

Archie Cochrane: the name behind the Cochrane Collaboration

"Effectiveness and Efficiency: Random Reflections on Health Services (1972)"

Generalizable knowledge
Manual of 7 steps to create evidence based guidelines

1. Scope and Objectives
2. Literature searches
3. Sort and evaluate the evidence
4. Synthesize and interpret the evidence
5. Write recommendations
6. Assign classification and level of Evidence
7. Create Tables, Diagrams and Mnemonic
Classification of Recommendations

- **Class I:** Conditions for which there is evidence and/or general agreement that a given procedure or treatment is useful and effective.

- **Class II:** Conditions for which there is conflicting evidence and/or a divergence of opinion about the usefulness/efficacy of a procedure or treatment.
  - IIa. Weight of evidence/opinion is in favor of usefulness/efficacy
  - IIb. Usefulness/efficacy is less well established by evidence/opinion.

- **Class III:** Conditions for which there is evidence and/or general agreement that the procedure/treatment is not useful/effective, and in some cases may be harmful.
Level of Evidence

Level of Evidence A
Data derived from multiple randomized clinical trials

Level of Evidence B
Data derived from a single randomized trial, or non-randomized studies

Level of Evidence C
Consensus opinion of experts
Blood Conservation Guidelines
STS / SCA

Class IIa level C
Hb $\leq$ 6 g/dl transfusion is reasonable

Class IIb level C
risk for end-organ failure keep Hb $\geq$ 7 g/dl

International Consortium of Evidence Based Perfusion

“to improve continuously the delivery of care and outcomes for our patients”

– **Registry**
  - Create an international perfusion registry and facilitate its implementation
  - Identify gaps between current and evidence-based clinical practice

– **Guidelines**
  - Review, comment, and/or endorse evidence-based guidelines concerning the practice of cardiopulmonary bypass
  - Collaborate with medical societies in the development of guidelines concerning the practice of cardiopulmonary bypass
Best Practice of CPB

1. Alpha stat pH management
2. Arterial line temperature to 37°C
3. Avoid direct reinfusion of unprocessed blood
4. Blood cell processing /filtration
5. TEE or epiaortic ultrasonographic scan
6. Arterial line filter
7. Blood glucose concentration
8. Reduce hemodilution
9. Reduced and surface modified circuit

Conclusion

- A critical need for high quality studies particularly addressing high-risk patient groups
- Precisely define the components of the CPB circuit and the conduct of (techniques) of CPB.
- Make change when there is a gap between practice and written guidelines but make sure the change result in the intended effect.
Making Improvement

Knowing to Doing

Generalizable Scientific Evidence

Context Knowledge

Improvement

Knowing

Doing

Knowledge is of no value unless you put it into practice
Registry
Heart surgery in Norway
2007
Heart lung machines
A Nordic Registry?

- Compatible
- Electronic
- Easy
- Automated
- Safe
- Anonymous
- Retraceable
- Reports
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