

# Effects, management and optimization of extracorporeal techniques and technologies in contemporary cardiac surgery

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Propositions belonging to the dissertation

**“Effects, Management and Optimization of Extracorporeal Techniques and Technologies in Contemporary Cardiac Surgery.”**

**Ignazio Condello**

Maastricht, 19 April, 2024

1. The oxygen delivery in relation to oxygen extraction ratio was specific in terms of negative predictive value for hyperlactatemia (Chapter 3-4).
2. Low incidence of veno-arterial extracorporeal membrane oxygenation was found in right mini-thoracotomy and full-sternotomy approach after mitral valve surgery (Chapter 5).
3. The condensation during the use of normothermia reduce the oxygenation performance in polypropylene and polymethylpentene fiber oxygenators (Chapter 7).
4. Continuous field flooding insufflation with carbon dioxide during minimally invasive mitral valve repair and novel perfusion devices design are associated with a lower incidence of gaseous micro-embolic activity (Chapter 8-9).
5. The magnetically levitated centrifugal pumps for extracorporeal circulation support is associated with a lower risk of hemolysis in minimally invasive extracorporeal circulation (Chapter 12-13).
6. The use of conventional extracorporeal circulation contributes to the release of cytokines (Inflammatory response in cardiac surgery).
7. During cardiopulmonary bypass in adult patients, hyperlactatemia is detectable at a considerable rate (10%-20%) and is associated with postoperative morbidity and mortality (metabolism management during extracorporeal-circulation).
8. The goal-directed perfusion initiative during cardiopulmonary bypass reduces the incidence of acute kidney injury after cardiac surgery (GIFT study).

9. "Life is a wave of wonder!" (Giovanni Paolo II).
10. "Make the metronome your friend, not your enemy." (Vinnie Colaiuta, Drummer)
11. "You can check-in, but you can never check-out." (Pikes Hotel, Ibiza)