

# Acute cardiovascular and intensive care chronicles: ‘inception revealed—navigating the veno-arterial extracorporeal membrane oxygenation terrain and beyond’

Pascal Vranckx \*, David A. Morrow, Sean van Diepen , and Frederik H. Verbrugge

Hartcentrum Hasselt, Jessaziekenhuis, Stadsomvaart 11, Hasselt 3500, Belgium

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Welcome to the February issue of the *European Heart Journal: Acute Cardiovascular Care*, where groundbreaking research illuminates the landscape of cardiovascular critical care medicine. We invite our esteemed readership to embark on a journey through the multiple exciting manuscripts that grace this edition, each advancing our understanding of acute cardiovascular care.

In a retrospective study by Beer and Schrage (Beer B, Schrage B First steps taken, but many more ahead. *European Heart Journal. Acute Cardiovascular Care*, Volume 11, Issue 12, December 2022, Pages 904–905), the challenges and complexities of managing cardiogenic shock (CS) patients with veno-arterial extracorporeal membrane oxygenation (VA-ECMO) are explored. Complications, including bleeding, sepsis, and renal failure, were observed in 52% of the 501 patients studied. The study underscores the difficulties in predicting post-cannulation complications and highlights the need for robust and validated quantitative markers to guide selection of patients for VA-ECMO. Despite the associated risks, the potential benefits of VA-ECMO for specific high-risk CS patients are acknowledged, emphasizing the crucial role of ongoing research to refine selection criteria.

Heuts *et al.* (Heuts S, van de Koolwijk A, Gabrio A, Ubben J, van der Horst ICC, Delnoij TSR Extracorporeal life support in cardiac arrest: A post-hoc Bayesian re-analysis of the INCEPTION-trial. *European Heart Journal. Acute Cardiovascular Care*, zuad130, <https://doi.org/10.1093/ehjacc/zuad130>) present a Bayesian *post hoc* analysis of the multicentre Early Initiation of Extracorporeal Life Support in Refractory Out-of-Hospital Cardiac Arrest (INCEPTION) trial, comparing extracorporeal cardiopulmonary resuscitation (ECPR) to conventional CPR for out-of-hospital cardiac arrest. The findings reveal a 42% probability of a minimal clinically important difference favouring ECPR in 30-day survival with a favourable neurologic outcome. This probabilistic interpretation sheds light on potential benefits of ECPR in refractory cardiac arrest, offering valuable insights into the complex decision-making process in resuscitation scenarios.

In a retrospective analysis of patients with acute heart failure (AHF) treated with sodium nitroprusside, Bocchino *et al.* (Bocchino P, Cingolani M, Frea S, Angelini F, Gallone G, Garatti L Organ perfusion pressure at admission and clinical outcomes in patients hospitalized

for acute heart failure. *European Heart Journal. Acute Cardiovascular Care*, zuad133, <https://doi.org/10.1093/ehjacc/zuad133>) investigate organ perfusion pressure (OPP) as a prognostic marker. Calculated as mean arterial pressure minus central venous pressure, on-admission OPP emerged as the best predictor of worsening heart failure at 48 h with a reported sensitivity of 100%. The study suggests that this simple haemodynamic parameter holds promise as a valuable prognostic tool for the early identification of AHF patients at risk of deterioration.

A Schmitt *et al.*'s retrospective study delves into the prognostic impact of acute AHF in patients with mildly reduced ejection fraction (HFmrEF). With a cohort of 2184 HFmrEF patients, the study reveals a 22.2% AHF rate, which was significantly associated with increased risks of 30-month all-cause mortality and HF-related rehospitalization. The findings emphasize the common occurrence of AHF in HFmrEF and its independent correlation with adverse outcomes, calling attention to the need for targeted interventions in this patient population.

G Peppe *et al.* propose a simplified diagnostic and therapeutic approach for AHF in emergency departments (ED) based on the HF-ABCDE+FG mnemonic. Aligning with European Society of Cardiology guidelines, this approach integrates diagnostic steps and recommends medications, aiming to improve outcomes and reduce rehospitalizations. The proposed sequence guides clinicians in early identification and optimal management of HF causes and triggers, providing a comprehensive tool for navigating AHF scenarios in ED.

Transcatheter cardiac valve procedures, particularly transcatheter aortic valve replacement (TAVR) and transcatheter edge-to-edge repair (TEER) of both the mitral and tricuspid valve, have witnessed a surge due to established benefits. A Bhatt *et al.*'s analysis of 22 869 cardiac intensive care unit admissions with nearly 1000 admissions linked to TAVR/TEER reveals insights into resource utilization and outcomes. Monitoring alone emerged as the primary indication, demonstrating low rates of shock and ventilation in this subgroup. The study suggests opportunities to refine post-procedural triage for TAVR/TEER patients, potentially expanding access to critical care resources for acutely ill patients.

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\* Corresponding author. Tel: +3211309579, Email: [pascal.vranckx@iccuhasse.lt.be](mailto:pascal.vranckx@iccuhasse.lt.be); [pascal.vranckx@jessazh.be](mailto:pascal.vranckx@jessazh.be)

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We are delighted to resume our biomarker spotlight with a manuscript from F Morello, highlighting the challenges in diagnosing Acute Aortic Syndromes, where the gold-standard contrast-enhanced computed tomography angiography faces limitations, leading to the exploration of the promising aortic biomarker D-dimer, which, while exhibiting high sensitivity, requires ongoing studies for an age-adjusted cut-off to improve diagnostic accuracy.

Finally, do not miss the enlightening educational paper by Goldfine *et al.* (Goldfine C, Troger A, Erickson T, Chai P Beta blocker and calcium channel blocker toxicity: Current evidence on evaluation and management. *European Heart Journal. Acute Cardiovascular Care*, zuad138, <https://doi.org/10.1093/ehjacc/zuad138>), exploring the vital topic of beta blocker and calcium channel blocker toxicity in adults. Delve

into the current evidence on evaluation and management, gaining crucial insights into these toxicities. This paper is essential for healthcare professionals navigating the complexities of overdose scenarios, offering valuable guidance for optimal patient care.

We extend our sincere thanks to our readership for joining us on this journey of discovery and knowledge.

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