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ISSUE SUMMARY
Educational papers

Die kunst des Fortschritts liegt darin, Ordnung inmitten des Wandels zu bewahren: 'the art of progress lies in preserving order amid change'

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Welcome to the August 2026 issue of the *European Heart Journal: Acute Cardiovascular Care* (*EHJ-ACVC*), published as the global cardiovascular community gathers in Münich for the annual European Society of Cardiology (ESC) Congress, united by a shared ambition to advance cardiovascular science and reduce the worldwide burden of cardiovascular disease.

Few fields reflect the complexity of modern medicine better than acute cardiac and intensive care, where physiology, technology, and clinical judgement intersect under conditions of (sometimes extreme) urgency. Increasingly, the central challenge is no longer simply whether intervention is possible, but rather which intervention should be applied, in which patient, at what moment, and at what physiological cost. The studies assembled in this issue collectively reflect this evolution towards more individualized and physiologically informed care. They address some of the most pressing questions in contemporary acute cardiovascular medicine, including optimal haemodynamic targets in out-of-hospital cardiac arrest and cardiogenic shock,[1–8] patient selection for mechanical circulatory support,[9,10] abbreviated antithrombotic strategies in patients with high bleeding risk following drug-eluting stent implantation,[11–15] risk stratification in myocarditis, and rapid haemodynamic stabilization in acute heart failure[16] and atrial fibrillation.[17,18] Together, these contributions highlight a field increasingly defined not by more interventions alone, but by more precise, selective, and physiologically coherent intervention.

This issue's Editor's Choice, the predefined BOX-trial substudy by Ten Berg *et al.*[19] addresses one of the central controversies in contemporary shock care: the optimal blood pressure target in infarction-related cardiogenic shock following out-of-hospital cardiac arrest. Among 258 patients, higher mean arterial pressure targets (77 vs. 63 mmHg) required substantially greater noradrenaline exposure and improved cardiac index and mixed venous oxygen saturation during the first 24 h. These short-term haemodynamic gains, however, failed to translate into improved lactate clearance, neurological recovery, or survival. Pulmonary arterial wedge pressures remained consistently higher in the high-target group, suggesting greater myocardial stress, while 1-year mortality was not significantly different (34% vs. 26%; hazard ratio, 0.70; 95% CI, 0.45–1.10). These findings reinforce an increasingly important concept in cardiac arrest: short term does not necessarily equate to biological recovery.[1]

The complexity of patient selection in cardiogenic shock is further explored by Beske *et al.* in a *post hoc* analysis from the DanGer Shock trial.[20] Approximately 29% of conventionally treated STEMI-related cardiogenic shock patients achieved rapid recovery and discharge from intensive care within 3 days, compared with 15% in the micro-axial flow pump group. Patients with rapid recovery demonstrated markedly lower 180-day mortality (9% vs. 46%; $P < 0.001$), reduced inotropic requirements (44% vs. 85%), and less mechanical ventilation (35% vs. 82%). However, predictive discrimination remained modest (AUC 0.74), underscoring the persistent difficulty of identifying which patients truly require escalation to mechanical circulatory support at the time of presentation.

In a large BIOFLOW-DAPT analysis, Nader Mankerious *et al.* evaluated 1786 patients with high bleeding risk treated with abbreviated 1-month dual antiplatelet therapy following implantation of contemporary ultra-thin strut drug-eluting stents.[21] Cardiac mortality remained significantly higher in patients with acute coronary syndromes (ACS) than in chronic coronary disease (3.4% vs. 1.3%; hazard ratio, 2.60; 95% CI, 1.33–5.10; $P = 0.005$). Nevertheless, target lesion failure was nearly identical between ACS vs. chronic coronary patients (6.8% vs. 6.7%), while rates of myocardial infarction, stent thrombosis, and major bleeding remained similarly low irrespective stent platforms. These findings further support carefully tailored antithrombotic strategies. Alongside these technologically advanced domains of cardiovascular medicine, this issue also reaffirms the enduring value of simple bedside tools in risk stratification.

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In one of the largest contemporary multi-centre myocarditis cohorts, Jeong Hoon Yang *et al*. demonstrate that prolonged QRS duration independently predicts mortality, ventricular assist device implantation, and heart transplantation in acute myocarditis.[22–24] Among 925 patients, 27% exhibited QRS duration > 120 ms, which was associated with substantially greater disease severity and markedly poorer 1-year event-free survival (approximately 60% vs. >90%). Importantly, each 10-ms increase in QRS duration was independently associated with an ~10% higher risk of death, transplantation, or ventricular assist device implantation (adjusted hazard ratio, 1.101; 95% CI, 1.049–1.156; $P < 0.001$). Even in an era dominated by advanced imaging and molecular diagnostics, the surface electrocardiogram remains a remarkably powerful prognostic tool.

Finally, in the LARISA trial (landiolol for rate control in decompensated heart failure due to atrial fibrillation), Sramko *et al*. evaluated intensive rate control with intravenous landiolol in acute heart failure complicated by rapid atrial fibrillation.[25] The primary endpoint of sustained HR reduction > 20% or <115/min at 2 h was achieved in 80% of patients receiving landiolol compared with 20% receiving standard therapy ($P = 0.04$), while median time to successful rate control was substantially shorter (1.5 vs. 4 h; $P = 0.016$). Intensive therapy also produced earlier improvement in dyspnoea and pulmonary congestion without sustained hypotension or treatment-related adverse events. These findings provide important prospective evidence supporting rapid, carefully titrated rate control in acute heart failure, a common but insufficiently studied clinical scenario.

Beyond these original investigations, this month's Pathophysiology Page by Tokmak *et al*.[26] examines the interplay between intracranial hypertension and cerebrovascular autoregulation in acute neurological injury. The authors highlight how impaired autoregulation renders cerebral blood flow increasingly pressure-dependent, thereby amplifying secondary brain injury after stroke, traumatic brain injury, and hypoxic–ischaemic encephalopathy. Challenging conventional intracranial pressure and cerebral perfusion pressure thresholds, the review emphasizes emerging concepts including 'ICP dose', individualized perfusion targets, and autoregulation-guided neuromonitoring. Together, these advances support a more personalized approach to neurocritical care.

This month, our traditional educational paper has been traded for an important international consensus statement by Lim and colleagues. Addressing the longstanding challenge of defining cardiogenic shock, the authors[27] propose pragmatic, pathophysiology-based diagnostic criteria that integrate evidence of hypoperfusion, haemodynamic compromise, and cardiac dysfunction. Their timely work provides a much-needed framework to harmonize clinical practice and research, while laying the foundations for a future universal definition of cardiogenic shock.

Taken together, the studies assembled in this issue capture a field undergoing rapid scientific and conceptual evolution. Acute cardiovascular care is increasingly defined not by isolated interventions alone, but by precision in selecting when, how, and in whom therapies should be applied. As the international cardiovascular community gathers in Munich to discuss the future of cardiovascular medicine, these contributions collectively remind us of an enduring principle captured in the German maxim, 'Die Kunst des Fortschritts liegt darin, Ordnung inmitten des Wandels zu bewahren'—the art of progress lies in preserving order amid change. Increasingly, meaningful progress in acute cardiovascular care depends not upon more intervention alone, but upon more precise, physiologically coherent, and patient-centred care.

We wish you an inspiring ESC Congress and very much look forward to seeing many of you in Munich.

Author contributions

Pascal Vranckx (Writing—review & editing [lead]), David Morrow (Writing—review & editing [supporting]), Sean van Diepen (Writing—review & editing [supporting]), and Frederik H. Verbrugge (Writing—review & editing [supporting])

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Data availability

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References

1. Krychtiuk KA, Speidl WS. Initial haemodynamic assessment of cardiogenic shock: back to basics? *Eur Heart J Acute Cardiovasc Care* 2023;**12**:661–662.
2. Krychtiuk KA, Vrints C, Wojta J, Huber K, Speidl WS. Basic mechanisms in cardiogenic shock: part 2—biomarkers and treatment options. *Eur Heart J Acute Cardiovasc Care* 2022;**11**:366–374.
3. Krychtiuk KA, Vrints C, Wojta J, Huber K, Speidl WS. Basic mechanisms in cardiogenic shock: part 1-definition and pathophysiology. *Eur Heart J Acute Cardiovasc Care* 2022;**11**:356–365.
4. Grand J. Lactate dynamics and metabolic differences in cardiogenic shock across clinical contexts. *Eur Heart J Acute Cardiovasc Care* 2025;**14**:432–433.
5. Frea S, Gravinese C, Boretto P, De Lio G, Bocchino PP, Angelini F, *et al.* Comprehensive non-invasive haemodynamic assessment in acute decompensated heart failure-related cardiogenic shock: a step towards echodynamics. *Eur Heart J Acute Cardiovasc Care* 2024;**13**:646–655.
6. Meuwese CL, Melkert JA, Møller JE. The hemodynamic envelope, a novel aviation-inspired safety framework for personalized monitoring in cardiogenic shock. *Eur Heart J Acute Cardiovasc Care*;doi:10.1093/ehjacc/zuag031. Published online ahead of print 9 March 2026.
7. Grand J, Granholm A, Wiberg S, Schmidt H, Møller JE, Mølstrøm S, *et al.* Lower vs. higher blood pressure targets during intensive care of comatose patients resuscitated from out-of-hospital cardiac arrest-a Bayesian analysis of the BOX trial. *Eur Heart J Acute Cardiovasc Care* 2025;**14**:14–23.
8. Byrne C, Kjærgaard J, Møller JE, Biering-Sørensen T, Borregaard B, Schmidt H, *et al.* Relevance of age and hypertension for blood pressure targets in comatose survivors of cardiac arrest: a BOX-trial sub-study. *Eur Heart J Acute Cardiovasc Care* 2024;**13**:663–669.
9. Tavazzi G, Morrow DA. Efficacy and safety of mechanical circulatory support in acute myocardial infarction complicated by cardiogenic shock: DanGer trial in perspective. *Eur Heart J Acute Cardiovasc Care* 2024;**13**:365–367.
10. Zeymer U, Freund A, Hochadel M, Ostadal P, Belohlavek J, Massberg S, *et al.* Do DanGer-SHOCK-like patients benefit from VA-ECMO treatment in infarct-related cardiogenic shock? Results of an individual patient data meta-analysis. *Eur Heart J Acute Cardiovasc Care* 2024;**13**:658–661.
11. Byrne RA, Rossello X, Coughlan JJ, Barbato E, Berry C, Chieffo A, *et al.* 2023 ESC guidelines for the management of acute coronary syndromes. *Eur Heart J Acute Cardiovasc Care* 2024;**13**:55–161.
12. Greco A, Di Leo G, Finocchiaro S, Imbesi A, Capodanno D. Dual antiplatelet therapy escalation and de-escalation. *Eur Heart J Acute Cardiovasc Care* 2026;**15**:318–336.
13. Landi A, Aboyans V, Angiolillo DJ, Atar D, Capodanno D, Fox KAA, *et al.* Antithrombotic therapy in patients with acute coronary syndrome: similarities and differences between a European expert consensus document and the 2023 European Society of Cardiology guidelines. *Eur Heart J Acute Cardiovasc Care* 2024;**13**:173–180.
14. Landi A, Valgimigli M. Antithrombotic therapy in patients with chronic coronary syndrome: a focus on the 2024 European Society of Cardiology guidelines. *Eur Heart J Acute Cardiovasc Care* 2025;**14**:178–182.
15. Valgimigli M, Gragnano F. The benefit and harm of treating STEMI: between ischemia, bleeding, and reperfusion injury. *Eur Heart J Acute Cardiovasc Care* 2020;**9**:259–261.

16. Bocchino PP, Cingolani M, Frea S, Angelini F, Gallone G, Garatti L, *et al.* Organ perfusion pressure at admission and clinical outcomes in patients hospitalized for acute heart failure. *Eur Heart J Acute Cardiovasc Care* 2024;**13**:215–224.
17. Berezin AE. Landiolol in patients with supraventricular arrhythmias: real-world efficacy and safety. *Eur Heart J Acute Cardiovasc Care* 2026;**15**:104–106.
18. Dizdarevic A-M, Šramko M, Mangner N, Merkely B, Zima E, Nikolaos N, *et al.* A multicentre observational study on landiolol use, efficacy, and safety in European patients with supraventricular arrhythmia (Landi-UP). *Eur Heart J Acute Cardiovasc Care* 2026;**15**:95–103.
19. Ten Berg S, Beske RP, Grand J, Schmidt H, Kjærgaard J, Møller JE, *et al.* The impact of blood pressure targets on hemodynamics in patients with cardiogenic shock caused by infarction-related out-of-hospital cardiac arrest: a substudy of the BOX-trial. *Eur Heart J Acute Cardiovasc Care*;doi:10.1093/ehjacc/zuag045. Published online ahead of print 11 May 2026.
20. Beske RP, Klein A, Jensen LO, Eiskjær H, Mangner N, Polzin A, *et al.* Early clinical recovery in STEMI cardiogenic shock: insights from the DanGer shock trial. *Eur Heart J Acute Cardiovasc Care*. doi:10.1093/ehjacc/zuag029. Published online ahead of print 24 March 2026
21. Valgimigli M, Wlodarczak A, Tölg R, Merkely B, Kelbæk H, Legutko J, *et al.* Biodegradable-polymer or durable-polymer stents in patients at high bleeding risk: a randomized, open-label clinical trial. *Circulation* 2023;**148**:989–999.
22. Son J, Kim J, Hong D, Hyun J, Park H, Kim I-C, *et al.* Prognostic value of QRS duration in acute myocarditis: insights from a multicenter cohort study. *Eur Heart J Acute Cardiovasc Care*;doi:10.1093/ehjacc/zuag050. Published online ahead of print 6 April 2026.
23. Prepoudis A, Koechlin L, Nestelberger T, Boeddinghaus J, Lopez-Ayala P, Wussler D, *et al.* Incidence, clinical presentation, management, and outcome of acute pericarditis and myopericarditis. *Eur Heart J Acute Cardiovasc Care* 2022;**11**:137–147.
24. Rroku A, Kottwitz J, Heidecker B. Update on myocarditis—what we know so far and where we may be heading. *Eur Heart J Acute Cardiovasc Care* 2021;**10**:455–467.
25. Sramko M, Benak A, Toman J, Kleissner M, Pazdernik M, Kautzner J. Landiolol for rate control in decompensated heart failure due to atrial fibrillation—the LARISA trial. *Eur Heart J Acute Cardiovasc Care*;doi:10.1093/ehjacc/zuag027. Published online ahead of print 27 February 2026.
26. Tokmak F, Pörteners B, De Sloovere V, Meyfroidt G. Intracranial hypertension and cerebrovascular autoregulation: novel insights and clinical implications. *Eur Heart J Acute Cardiovasc Care* 2026:zuag063. doi:10.1093/ehjacc/zuag063.
27. Lim HS, Tycinska A, Delmas C, Moller JE, Pöss J, Stoppe C. Criteria for the Diagnosis of Cardiogenic Shock—European Perspective. A Clinical Consensus Statement of the Association for Acute CardioVascular Care, the Heart Failure Association, and the European Association of Percutaneous Cardiovascular Interventions of the ESC. 2026