A SPECIAL CASE

Patient in rural Ireland survives three hours of fully automated resuscitation

In the Winter of 2023, Dr. Jason van der Velde received a particularly memorable call. A 48-year-old man in rural Ireland had tried to take his own life.

After the emergency service arrived on the scene, the patient suffered an observed cardiac arrest at a body temperature of 27 °C. He was resuscitated for 90 minutes using a MEDUMAT Standard² emergeny ventilator with Chest Compression Synchronized Ventilation (CCSV) and mechanical chest compression until he arrived at the hospital. Once there, the first blood gas analysis showed almost normal pH values (pH=7.38), very good oxygenation (pO2=265.6 mmHg) as well as a potassium level of 3.45 mmol/l and a lactate of 4.3 mmol/l. After a further 90 minutes of fully automated resuscitation with CCSV, the patient was connected to ECMO. ROSC was achieved after raising the body temperature to 34 °C. After a three-day stay in the intensive care unit, the man was able to leave hospital with no neurological or physical deficits.

This case demonstrates that the system comprising CCSV and mechanical compression can maintain adequate perfusion and ventilation over several hours. It offers potential for further investigations to sustainably improve care of resuscitation patients.

"Fully automated CPR not only enables us to concentrate on diagnosing and treating the cause of the cardiac arrest. It also allows us to transport a cardiac arrest patient for a definitive intervention. For me, CCSV is the ultimate bridge to the cath lab or ECMO."

Dr. Jason Van Der Velde
Prehospital Emergency Medicine and
Critical Care Retrieval Physician (Cork University Hospital)

Source: „Van der Velde J, et al. Fully Automated Cardiopulmonary Resuscitation - a Bridge to ECMO.
In: Resuscitation 192, SUPPLEMENT 1, S52-S53, Nov 2023. https://www.resuscitationjournal.com/article/S0300-9572(23)00467-7/abstract "