



Symposium 13

打造 OHCA 的韌性醫療鏈：急診於 ECPR 中的角色

Enhancing Resilience in OHCA Rescue: Emergency Physician's Role in ECPR

時間：2025 年 6 月 28 日(六) 09:20~10:20

會議室：401 會議廳

座長：江文莒醫師(台大醫院雲林分院)、張維典醫師(台大醫院)

09:20~09:45 Resilience to sudden cardiac arrest: Progress in ECPR

主講人：Dr. Yosuke Matsumura (千葉縣立急救醫療中心)

09:45~10:10 從院內 ECPR 到院前 ECPR：我們還差多遠？

From In-Hospital ECPR to Prehospital ECPR: How Close Are We?

主講人：朱聖恩醫師(亞東醫院)

10:10~10:20 綜合討論

課程簡介

Recent randomized controlled trials suggest a potential benefit of extracorporeal cardiopulmonary resuscitation (ECPR). This presentation describes progress in ECPR with the regional protocol, safe cannulation, and advanced techniques for venoarterial extracorporeal membrane oxygenation (VA ECMO).

1. Benefits and feasibility of ECPR

ARREST demonstrated Early ECPR for refractory VF patients significantly improved survival to hospital discharge compared with standard ACLS (43%vs.0%, Lancet 2020;396:1807). EROCA failed to demonstrate feasibility for expedited transport and initiating ECPR in the ED (42% had dispatch-to-arrival <30min, 60% had arrival-to-ECPR <30min, Ann Emerg Med 2021;78:92). Regional ECPR protocol enhances the feasibility of ECPR by minimizing transportation time with pre-determined regional protocols. To minimize the procedure time, early activation of a multidisciplinary ECMO team achieves rapid ECPR initiation.

2. ECPR cannulation in the ER

Blind puncture and insertion used to be a common technique, resulting in frequent vascular complications. The proactive decision to arterial access shortens the time to initiate ECMO. Real-time US-guided puncture has become standard procedure, which visualizes CFA



accurately to avoid low or high puncture. The guidewire (GW) in the aorta and IVC must be confirmed with a US or X-ray. The Skin incision, subcutaneous dissection, and "two-stage angle" dilation decrease the resistance. However, US and X-ray do not always provide sufficient GW navigation for cannulation.

3. Advanced techniques for VA-ECMO

US visualizes only subxiphoid GW presence, and X-ray cannot detect the deflection in the right atrium. Fluoroscopy visualizes the dynamic insertion process. Direct transfer to cath-lab achieved rapid and safe ECPR with better neurological outcomes (JAMA 2022;327:737). Moreover, Hybrid ER provides stat SAH/AAD information before CAG, which avoids "regretful PCI". GW misplacement, left CFV approach, distal perfusion catheter, low/high puncture, and AV fistula were managed safely with fluoroscopy. Surgical repair is sometimes essential in complication management. ECMO team requires vascular surgeon attendance.