Plenary lecture V

Resilience to Trauma Death: Endovascular Resuscitation and Hemostasis

時間：2025 年 6 月 28 日(六) 11:00~11:30
會議室：101 會議廳
座長：孫仁堂醫師(亞東醫院)、黃豐締醫師(高雄市立民生醫院)
主講人：Yosuke Matsumura (Medical Director, Head of Department of Intensive Care)

課程簡介

Trauma surgery has been the standard therapy to resuscitate and achieve hemostasis to prevent trauma death. Advancements in CT imaging and endovascular therapy provide not only less invasive treatment but also more resilient strategy.

1. REBOA in subdiaphragmatic hemorrhage

Use of REBOA has increased but it does not have robust evidence to support survival benefit compared to standard hemostasis. Early arterial access and immediate hemostasis are crucial to utilizing REBOA. The potential benefit of REBOA was reported compared to resuscitative thoracotomy and aortic cross-clamp (RTACC). When chest injury is denied, REBOA can be chosen proactively.

Partial REBOA (P-REBOA) decreases the risk of ischemia-reperfusion injury (IRI). Balloon volume could be utilized to manage organ perfusion during P-REBOA (Matsumura Y et al. Sci Rep 2020;10:5680, Matsumura Y et al. Sci Rep 2022;12:18745). Novel therapy is still warranted to overcome REBOA-related IRI (Matsumura, Y, et al. Sci Rep 2024;14:32128, Hayashi Y and Matsumura Y et al. Eur J Trauma Emerg Surg 2025;51:66).

2. Selective balloon occlusion and angioembolization in the spleen

Angioembolization is less invasive hemostasis but is considered a slower than surgery. Selective arterial balloon occlusion in the endo-organ, such as the spleen or kidney, achieves effective bleeding control within 10 min, which does not induce the IRI in non-selective organs, unlike REBOA. Angioembolization could be achieved after balloon occlusion within 30 min.

3.VV ECMO and bronchial blocker in severe lung contusion

Lung contusion disrupts not only circulaiton (C) but respiration (B). Lung resection has been the only solution but it deteriorates oxygenation. VV ECMO supports respiratory conditions, and bronchial blocker provides pressure hemostasis and isolates the hematoma. Additional angioembolization of intercostal or bronchial arteries achieves the hemostasis. This non-surgical strategy saves not only life but also respiratory functions without lung resection.

Name	Yosuke Matsumura
Organization	Chiba Emergency and Psychiatric Medical Center
Title	M.D., Ph.D
Current Positions	Medical Director, Head of Department of Intensive Care
Educational and Career Experiences	● MD (1999-2005), Chiba University School of Medicine ● PhD (2011-2015), Chiba University Graduate School of Medicine ● Fellowship in Emergency and Critical Care Medicine, Chiba University Hospital (2007-2008, 2011-2013) ● Fellowship in Radiology, National Hospital Organization Disaster Medical Center (2010-2011) ● Visiting research fellow (2015 – 2017), R. Adams Cowley Shock Trauma Center, University of Maryland ● Assistant professor, Department of Emergency and Critical Care Medicine, Chiba University Graduate School of Medicine, Chiba, Japan (2013 – 2015, 2017 - 2020) ● Head, Department of Intensive Care, Chiba Emergency Medical Center, Chiba, Japan (2020-2023) ● Medical Director & Head of Department of Intensive Care, Chiba Emergency and Psychiatry Medical Center, Chiba, Japan (2023 -present)