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戰傷與外傷處置的整合視角：輸血、腦傷與化學武器威脅

**Integrated Perspectives on Combat and Trauma Care:  
Transfusion, Brain Injury, and Chemical Weapons Threats**

時間：115年6月28日(星期日) 08:20~12:00  
地點：臺北榮民總醫院 致德樓第五會議室

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<b>08:20-08:30</b>	<b>Opening Remarks</b>	黃獻皞教授 Hsien-Hao Huang
	座長：陳春廷 醫師 (Chung-Ting Chen)	
08:30-09:15	外傷出血與輸血策略新觀點 Emerging Concepts in Trauma Hemorrhage and Transfusion Strategies	詹勝宇 醫師 Sheng-Yu Zhan
09:15-10:00	烏克蘭戰時醫療實務經驗分享 Wartime Medical Practice Experience Sharing from Ukraine	許智鈞 醫師 Chih-Chun Hsu
<b>10:00-10:30</b>	<b>Coffee Break</b>	
	座長：陳春廷 醫師 (Chung-Ting Chen)	
10:30-11:15	創傷性腦外傷的持續照護：癲癇預防與管理 Continuum of Care in Traumatic Brain Injury: Prevention and Management of Post-Traumatic Epilepsy	張浩明 醫師 Hao-Ming Chang
11:15-12:00	化學武器的威脅與醫療應變 Chemical Weapons Threats and Medical Management	王則堯 醫師 Tse-Yao Wang

# Emerging concepts in trauma hemorrhage and transfusion strategies

## 外傷出血與輸血策略新觀點

Sheng-Yu Zhan

詹勝宇

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長庚紀念醫院 外傷急症外科

Trauma-related hemorrhage remains one of the leading causes of preventable death worldwide, particularly within the first hours following injury. Recent advances in trauma care have reshaped the understanding of trauma-induced coagulopathy and the optimal strategies for resuscitation and transfusion. This lecture will review emerging concepts in the pathophysiology of traumatic hemorrhage, including endothelial dysfunction, fibrinolytic dysregulation, and the early development of trauma-induced coagulopathy.

Key developments in damage control resuscitation will be discussed, with emphasis on balanced blood component therapy, the role of whole blood transfusion, early use of anti-fibrinolytics such as tranexamic acid, and goal-directed resuscitation guided by viscoelastic hemostatic assays. In addition, evolving strategies in hemorrhage control—including rapid identification of bleeding sources, integration of resuscitative endovascular techniques, and multidisciplinary trauma team coordination—will be highlighted. From an emergency and critical care perspective, the talk will also address practical considerations in implementing modern transfusion protocols, optimizing massive transfusion systems, and improving trauma system readiness. By integrating current evidence and clinical experience, this session aims to provide frontline clinicians with an updated framework for early recognition and effective management of severe traumatic hemorrhage, ultimately improving survival outcomes in critically injured patients.

# Wartime medical practice experience sharing from Ukraine

## 烏克蘭戰時醫療實務經驗分享

**Chih-Chun Hsu**

許智鈞

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*新竹馬偕紀念醫院 急診醫學科*

The ongoing conflict in Ukraine has presented unprecedented challenges to the healthcare system, requiring rapid adaptation and innovation in emergency medical care under extreme conditions. This presentation will share firsthand experiences and practical insights from frontline medical operations in Ukraine, focusing on the unique aspects of wartime emergency medicine. Key topics include the establishment and operation of field hospitals in combat zones, triage protocols adapted for mass casualty incidents involving both military and civilian populations, and the management of complex traumatic injuries including blast injuries, gunshot wounds, and multi-system trauma. The presentation will discuss critical decision-making processes under resource constraints, innovative improvisation techniques for medical procedures when standard equipment is unavailable, and the psychological impact on both patients and healthcare providers. Special attention will be given to the coordination between military and civilian medical services, evacuation strategies from hot zones to definitive care facilities, and the integration of international medical volunteers into local healthcare systems. Drawing from real cases and operational experiences, this session aims to provide valuable lessons learned that can inform disaster preparedness, mass casualty response planning, and emergency medical care in austere environments. The presentation will also address the resilience of healthcare workers, ethical challenges in extreme situations, and the importance of international medical cooperation in conflict zones.

# Continuum of care in traumatic brain injury: Prevention and management of post-traumatic epilepsy

## 創傷性腦外傷的持續照護：癲癇預防與管理

**Hao-Ming Chang**

張浩明

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臺北榮民總醫院 急診醫學部

Traumatic brain injury (TBI) is a major cause of neurological morbidity worldwide and is frequently associated with the development of post-traumatic epilepsy (PTE), which may significantly affect long-term functional outcomes and quality of life. The continuum of care for patients with TBI requires coordinated strategies that extend from the acute emergency phase to long-term neurological follow-up. This lecture will provide an overview of the epidemiology and pathophysiological mechanisms underlying post-traumatic seizures and epilepsy, including the roles of structural brain injury, neuro-inflammation, and neuronal network reorganization. Key aspects of early management will be discussed, particularly the identification of patients at high risk for seizures and the evidence-based use of prophylactic antiepileptic medications during the acute phase. In addition, the session will address the clinical approach to monitoring, diagnosis, and treatment of late post-traumatic epilepsy, including pharmacologic therapy, multidisciplinary follow-up, and rehabilitation considerations. From the perspectives of emergency medicine and neuro-critical care, practical issues in integrating acute management with long-term neurological care will also be highlighted. By emphasizing a comprehensive and longitudinal care framework, this session aims to enhance clinicians' ability to prevent, recognize, and manage post-traumatic epilepsy, ultimately improving neurological outcomes for patients with traumatic brain injury.

## Chemical weapons threats and medical management

### 化學武器的威脅與醫療應變

**Tse-Yao Wang**

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Although chemical weapons are strictly regulated under international conventions, recent conflicts and terrorist incidents have demonstrated that they remain a real threat to civilians and health systems. In addition, large-scale releases of toxic industrial chemicals may present with clinical patterns and management principles that closely resemble chemical warfare agent exposures. This lecture will provide a concise overview of major classes of chemical warfare agents and high-risk toxic chemicals—including nerve, vesicant, choking and blood agents—with emphasis on their toxicological mechanisms and typical toxidromes. Key elements of field response will be discussed: threat assessment and risk communication, personal protective equipment and hot/warm/cold zone setup, strategies for decontamination and triage, and syndromic-based antidotal and supportive treatment. From an emergency and disaster medicine perspective, the talk will further address hospital preparedness for chemical incidents, including mass-casualty surge pathways, design of decontamination and patient flow, incident command and coordination, and inter-agency collaboration. By presenting a structured framework for risk recognition and medical management, this session aims to support frontline clinicians in providing safe and effective care during chemical weapons attacks and related toxic chemical emergencies, while maintaining responder safety as a primary priority.