

Tuesday November 11th

EANS Trauma Section Crash course PreEANS course

Venue: BMC - Biomedical Centre; Belfragesalen at D15

Multimodal monitoring and precision medicine for individualized treatment strategies in TBI and role of AI

Elham Rostami

09:00 Elham Rostan

09:45

Post-Traumatic Hydrocephalus: Diagnostic Challenges & Surgical solutions *Corrado Iaccarino* (Online)

ICP, PbtO2, and Microdialysis Monitoring: Principles, Surgical Techniques, and Practical Tips Laura Lippa & Elham Rostami

Hands-On stations

Elham Rostami & Laura Lippa

Hands-On Neurocritical Care Course Overview

Participants rotate through four interactive training stations, each designed to build practical skills and understanding of core monitoring and therapeutic techniques in neurocritical care and hydrocephalus management:

Cranial Monitoring & Valve Station

Practice on integrated manikins/skulls equipped for ICP monitoring and placement of external ventricular drains (EVD). Includes exposure to brain tissue oxygen probes (pbrO2) and hands-on experience with shunt valves. Participants drill burr holes and set up monitoring hardware, simulating acute and chronic intracranial pressure scenarios.

Microdialysis Station

Learn the principles and application of cerebral microdialysis, including catheter setup and sampling. Gain experience interpreting real-time metabolic data for brain injury patients and discuss its integration into multimodal monitoring protocols.

Miethke Shunt & Advanced ICP Station

Train in the use, adjustment, and troubleshooting of Miethke shunt valves, with practical demonstration of shunt management in hydrocephalus and post-traumatic contexts. Includes hands-on with advanced ICP monitoring systems (e.g., Raumedic/Medtronic) and case discussions focused on shunt-related complications and pressure management.

Valve and Pathophysiology Station

Demonstrations and discussion on shunt valve technologies in relation to post-traumatic hydrocephalus (PTH). Participants evaluate valve settings, flow characteristics, and mechanisms, with applied case scenarios illustrating clinical decision-making.

Each station incorporates guided simulation and active participation. Clinical teaching links pathophysiological concepts to technical procedures, reinforcing multidisciplinary approaches to complex neurocritical care.

10:00

12:00



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Lectures

"Evolution, Impact, and Future Directions of the Brain Trauma Foundation Guidelines in Severe Traumatic Brain Injury" (SIBICC, BTF)

Gregory Hawryluk

Penetrating Brain injury Gregory Hawryluk

Neurosurgical management of combat-related penetrating traumatic brain injury *Mattias Sköld* (Online)

Concussion- back to sport/School *Niklas Marklund*

Management of traumatic brain injury in older adults *Alfonso Lagares*

TBI & Polytrauma *Laura Lippa*

Advances in Pediatric TBI: Tailoring Monitoring and Management to the Developing Brain Anthony Figaji **(Online)**

12:30 -17:00

Posttraumatic seizures Ana Maria Castano Leon

Hemi- & bifrontal craniectomy, primary/secondary craniectomy, surgical aspects and clinical trial *Peter Hutchinson* (Online)

Intraoperative Hemostasis in Trauma Neurosurgery: Strategies for Managing Venous Sinus Injuries *Andras Buki*

Skull fracture & CSF Péter Tóth

Sex Differences in TBI Daniel Pinggera

Imaging in TBI - Modalities, Timing and Pitfalls *Daniel Pinggera*

Epidemiology of Traumatic Brain Injury: Pitfalls and Challenges *Yasmina Molero*

The evolution of TBI trials and studies across 50 years *Andrew Maas*

Case discussions: Andras Buki, Niklas Marklund, Alfonso Lagares