Traumatic brain injury in polytrauma

Protect the brain while treating the whole patient.

INJURY PRIORITIES / ADULT TRAUMA

Prevent secondary brain injury while arranging timely imaging, neurosurgical assessment and treatment of associated trauma.

01 Establish a baseline

Record Glasgow Coma Scale components, pupils and focal findings. Note sedation, paralysis, intoxication and other confounders. Repeat the examination and communicate any deterioration immediately.

02 Support oxygen delivery

Avoid hypoxaemia and hypotension. ACS initial adult goals include oxygen saturation at least 94% and systolic pressure at least 110 mmHg. Individualise targets with the neurocritical-care team and associated injuries.

03 Investigate & escalate

Obtain indicated head CT and early neurosurgical advice. Review anticoagulant use and coagulation. Neurological deterioration, new pupillary abnormality or suspected herniation needs immediate senior assessment and treatment.

04 Plan extracranial surgery

Agree brain-related constraints before fracture surgery: neurological course, imaging, perfusion and, when indicated, intracranial monitoring. Protect cerebral physiology during anaesthesia, positioning, transport and recovery.

WATCH POINT Do not apply permissive hypotension uncritically in significant brain injury. Avoid routine prophylactic hyperventilation.

DISCUSS WITH THE TEAM

Which brain-specific conditions must remain stable during the proposed operation?

READ THE SOURCES

[1] ACS Best Practices: Traumatic Brain Injury (2024), assessment and acute care.
[2] IMPACT consensus (2024), early fracture care with associated injuries.