



## *AAST Acute Care Surgery Didactic Curriculum*

### **Traumatic Brain Injury**

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#### **Advances in ICP Monitoring and Alternatives**

Highlights:

- Multiple options exist for ICP monitoring aside from intraparenchymal transducers or EVDs
  - Pupillometry, optic nerve sheath diameter ultrasound, and trans-cranial doppler have been studied but are not able to replace invasive monitors
- ICP monitoring may not allow for optimization of cerebral perfusion pressure
  - Brain Tissue Oxygenation monitoring may improve outcomes after TBI by individualizing cerebral blood flow
- Brain Tissue Oxygenation is being studied in randomized trials to further assess efficacy
- Pupillometry is a non-invasive monitoring technique that can alert a provider to ICP changes before detected on a monitor

#### **Prophylaxis for Post-Traumatic Seizures**

Highlights:

- Post-traumatic seizures rates relate to severity and mechanism of injury
  - Ranges from 2.1 – 18%
- Post-traumatic seizure worsens TBI so prophylaxis is routinely ordered although recommended guidelines are not followed
- Keppra has become the most common medication used but is not more efficacious when compared to phenytoin
- A critical evaluation of who should have seizure prophylaxis is necessary