Traumatic Brain Injury and the Geriatric Patient

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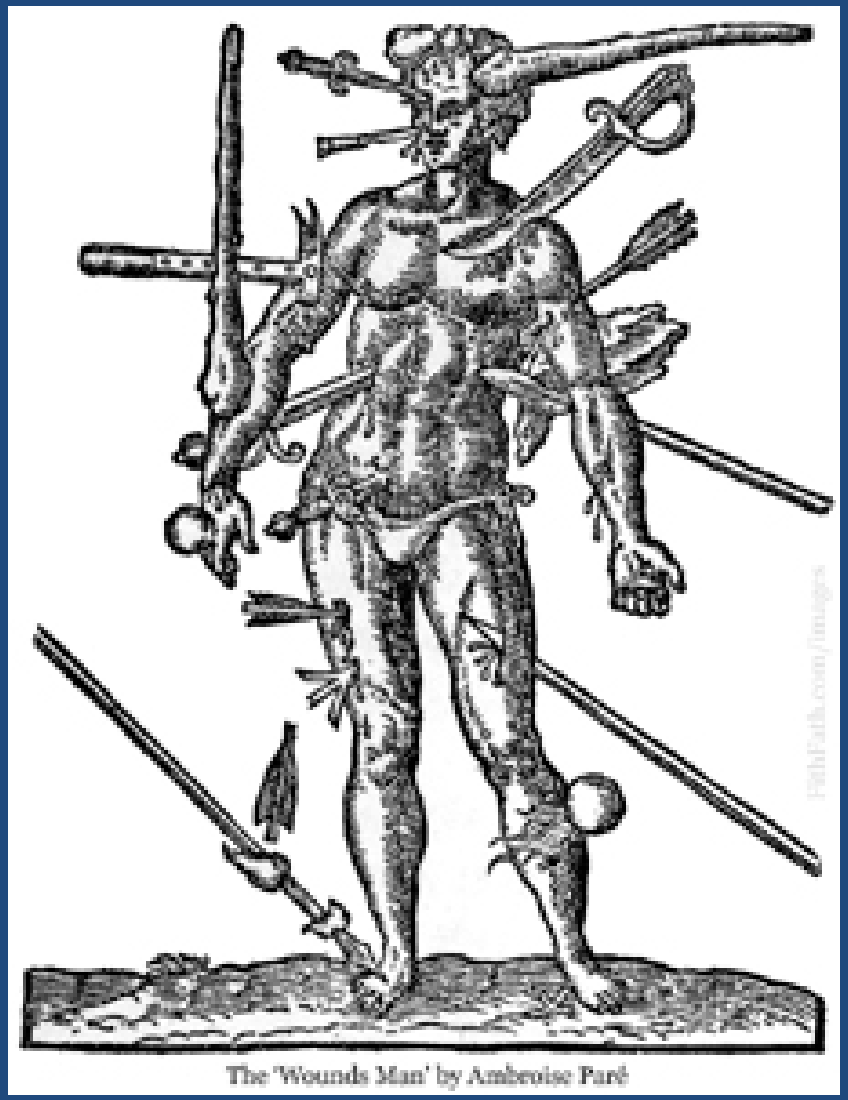

Traumatic brain injury in older adults: characteristics, causes and consequences

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- Int J Care Injured 2012
- 1998-2011
- TBI increased by 7.2%
  - SDH: 43%
  - Concussion: 24%
  - SAH 13%
- Age ≥ 85, 1/3 of patients
- Falls: 83%

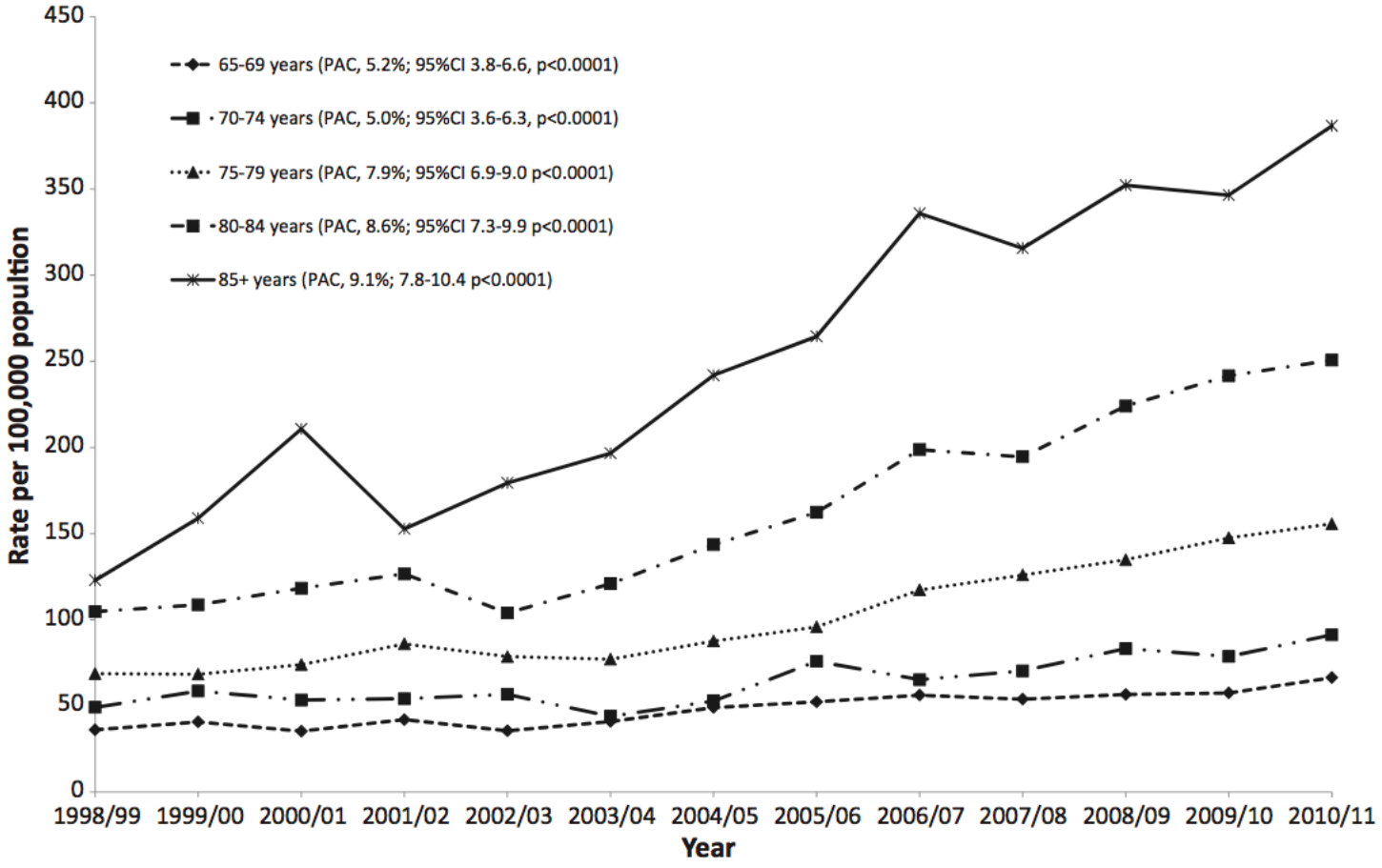


Fig. 1. Age-specific TBI admission rates by year, persons aged 65 years and older, NSW 1998/99 to 2010/11.

Clinical outcomes in traumatic brain injury patients on preinjury clopidogrel: A prospective analysis JTrauma 2014

Preinjury warfarin, but not antiplatelet medications, increases mortality in elderly traumatic brain injury patients JTrauma 2015

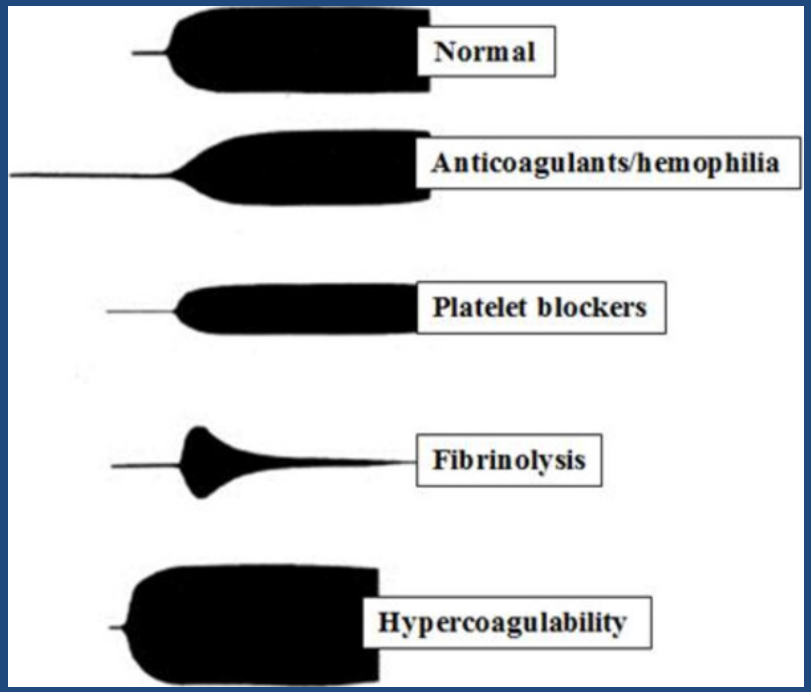
Outcomes in Traumatic Brain Injury for Patients Presenting on Antiplatelet Therapy Am Surg 2015

Compared to warfarin, direct oral anticoagulants are associated with lower mortality in patients with blunt traumatic intracranial hemorrhage: A TQIP study JTrauma 2016

Impact of age and anticoagulation: Need for neurosurgical intervention in trauma patients with mild traumatic brain injury

JTrauma 2014

TEG

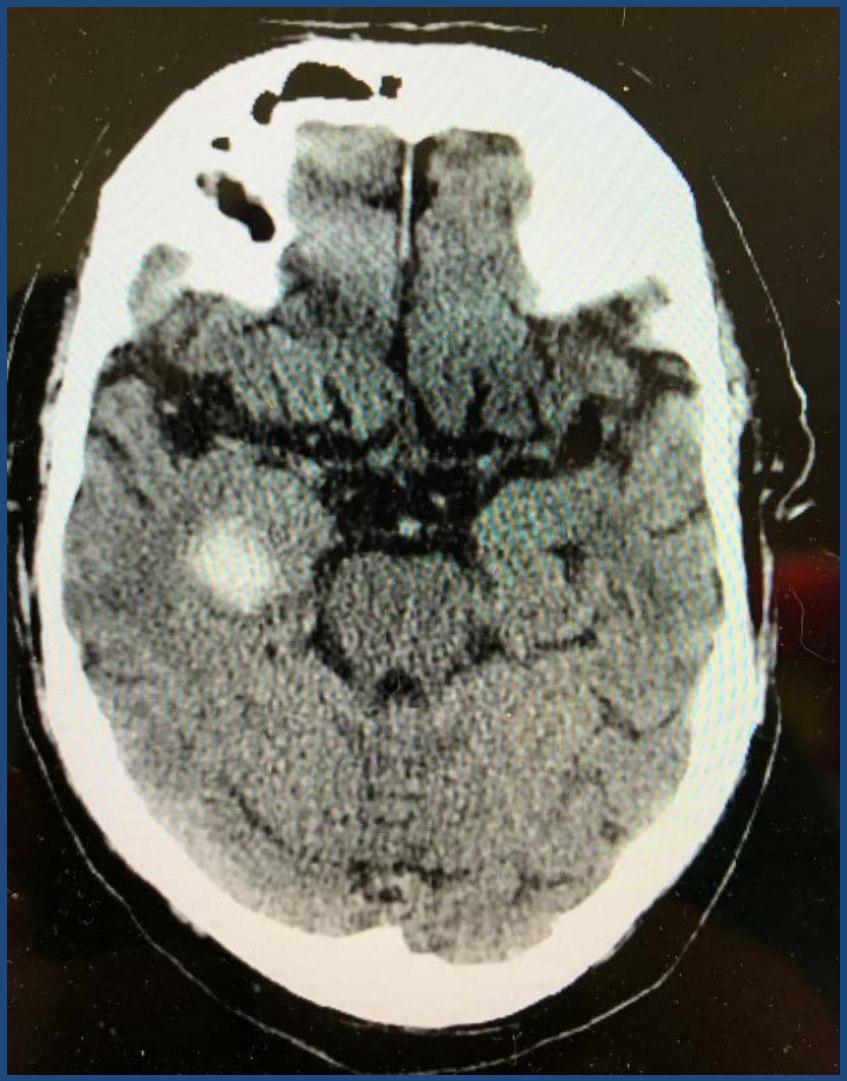


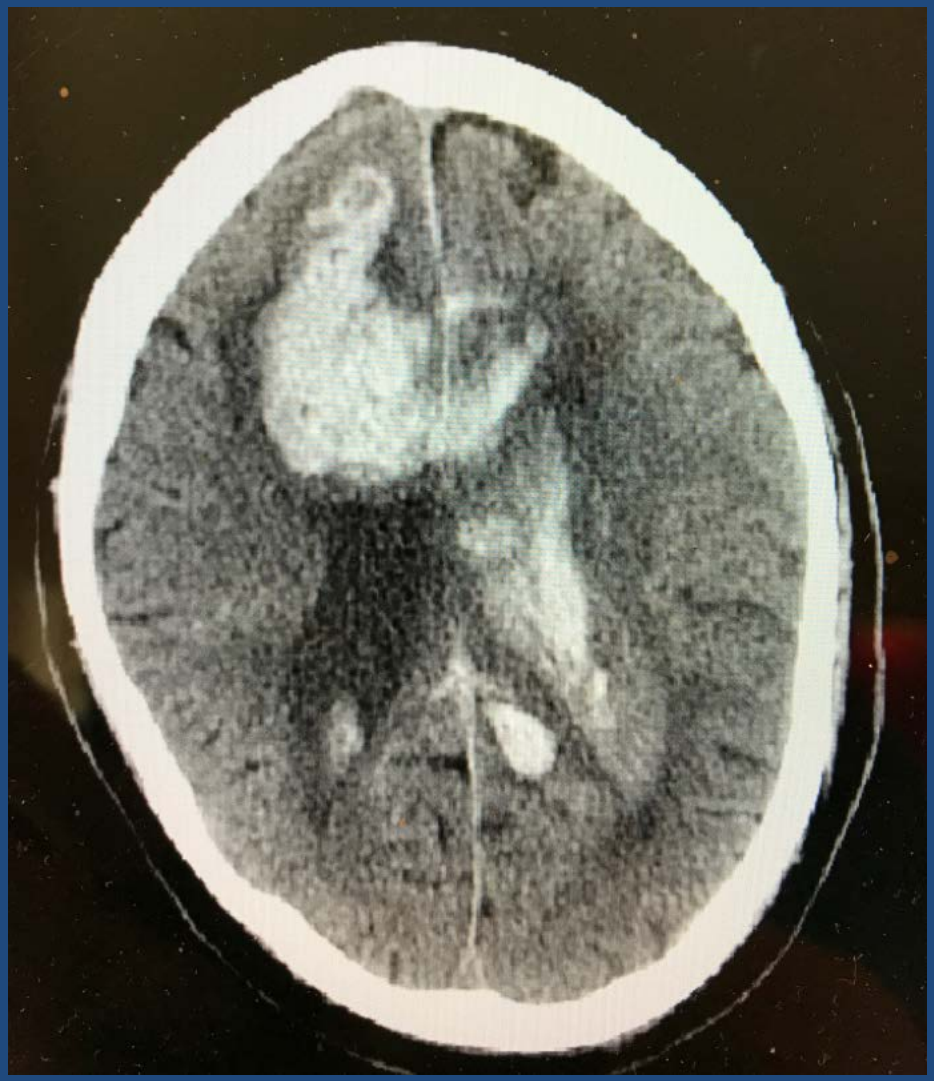
TEG value	Normal	Intervention
R time	5-10 min	FFP if R time > 10
K time	1-3 min	Cryo if K time > 3
alpha angle	53-72 degrees	PLTs +/- cryo if angle < 53
MA	50-70 mm	PLTs if MA < 50
LY30	0-3%	Tranexemic acid if LY30 > 3%

Stroke Incidence Following Traumatic Brain Injury in Older Adults

- J Head Trauma Rehab 2014
- 2006-2009: 16,936 patients with TBI
- 6 fold increase in hemorrhagic stroke
- Smaller increase in ischemic stroke

- Other studies have suggested 6-10 fold higher risk for a year following TBI





ACS TQIP

BEST PRACTICES IN THE MANAGEMENT OF TRAUMATIC BRAIN INJURY

Brain Injury in Elderly

- Elderly patients with mild head injury (GCS 13-14)
  - 14% of patients had evidence of traumatic lesion on head CT
  - 20% of those lesions requiring neurosurgical intervention
- American College of Emergency Physicians recommends that a head CT be obtained in any patient age ≥ 65 years who presents with mild head injury

Treatment and Prognostication TQIP

- Severe TBI patients should receive full treatment for at least 72 hours post-injury
- Age alone should not be considered a valid reason for treatment-limiting decisions
- Caution is advised when using prognostic models in individual patients, in particular when considering treatment-limiting decisions

Intensity of treatment, end-of-life care, and mortality for older patients with severe traumatic brain injury

- J Trauma Acute Care Surgery 2016
- Level 1, ≥65, GCS<8
- 32% died within first 72 hours
- At 72 hours: GCS<8 (29%), GCS>8 (34%)
  - GCS<8 higher in-hospital mortality
  - No difference in functional status at discharge
    - All required assistance with at least 1 ADL
  - No difference in 1 year survival (29%)

Mortality and Readmission After Cervical Fracture from a Fall in Older Adults: Comparison with Hip Fracture Using National Medicare Data

- JAGS 2015
- Cervical fractures increased: 4.6/10,000 to 5.3/10,000 (2006-2011)
- Hip fractures decreased: 77.3/10,000 to 63.5/10,000
- Mortality 1-year:
  - Cervical: 24.7%; with SCI: 41.7%
  - Hip fracture: 22.7%
- Died or readmitted at 1-year:
  - Cervical: 59.5%; with SCI: 73.4%
  - Hip fracture: 59.3%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