POINT OF VIEW

Geriatric traumatic brain injury: An old challenge

Traumatismo craneoencefálico en el anciano: un viejo reto

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Received 8 January 2018; accepted 18 February 2018

Up to one-quarter of trauma admissions to the intensive care unit (ICU) correspond to patients over 65 years.1 It is expected that the progressive aging of the population will double the number of geriatric trauma admissions in the next decades.2 Ground-level falls constitute the leading mechanism of injury because of decreased vision and hearing, slower reflexes, poorer balance, impaired motor and cognitive function, decreased muscle mass, strength, bone density and joint flexibility.1,3 Despite these conditions, geriatric patients are currently undergoing more recreational activities.

Specifically, traumatic brain injury (TBI) represents the major challenge. The central nervous system may be impaired because of cortical atrophy and plaque buildup in the cerebrovascular vessels, making the brain a more susceptible area to traumatic injury.2 Subdural hematomas are common.4 Geriatric TBI patients have greater morbidity and mortality compared with younger counterparts.2,5

Specific problems

- Under-triage: This is one of the major concerns in the attention of geriatric trauma patients6 and constitutes a modifiable factor. Mortality of these patients decreases when they are transferred to trauma centers with a high volume of geriatric trauma patients.7 Underlying reasons of under-triage include low-energy mechanisms of injury, unconscious age bias, unreliability of vital signs, the use of medications that blunt the physiologic response to injury and the lack of specific triaging scores.8
- Unreliability of clinical scales: Due to the increment in the subarachnoid space, the performance of clinical scales such as the Glasgow Coma Scale (GCS) is poor. In this context, prompt evaluation, a high index of suspicion and a low threshold to perform repeated cranial tomography (CT) scans even with subtle clinical changes is mandatory.2,5
- Use of antiplatelets and anticoagulants: According to the results of RETRAUCI, the use of antiplatelets or anticoagulants in trauma patients admitted to the ICUs of our environment reaches half of the patients over 75 years-old.9 The use of clopidogrel and anticoagulants is associated with progression of intracranial hemorrhages and poorer outcomes.9 The use of direct anticoagulants does not seem to be associated with worst prognosis when compared to warfarin.

How can we improve outcomes of geriatric TBI?

- Appropriate evaluation of comorbidity and frailty: Age itself is not an accurate indicator of the ability of the geriatric patient to respond to injury. Traditional vital signs and conventional severity scores do not work well
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How must the intensivist face geriatric TBI?

Classical studies showed an ominous prognosis in geriatric severe TBI patients. No patient with admission GCS less than 9 had good 6-month outcomes. Mortality achieved 80% in this group. Therefore, logical concerns about futility surrounded the ICU care of these patients. Routine use of neuromonitoring is controversial. Czosnyka et al. showed that older patients had lower intracranial pressure and therefore higher cerebral perfusion pressure, combined with worse vascular pressure reactivity and autoregulation. Neurosurgical interventions and modern neurointensive care have improved outcomes geriatric TBI. In our opinion, aggressive initial treatment is mandatory. After a reasonable time-frame and taking into account the comorbidities and frailty, limitation of life-sustaining therapies and palliative care must be considered in non-responding patients.

In summary, the management of geriatric TBI patients constitutes a challenge for intensivists. New prognostic models including baseline conditions, appropriate triaging and prompt reversal of anticoagulation may improve outcome. Aggressive neurosurgical and neurointensive care can achieve better outcomes than expected. Limitation of life-sustaining therapies and palliative care must be considered.

Authors’ contribution

Juan Antonio Llompart-Pou: Reviewed literature. Wrote the first and final drafts of the manuscript.

Conflict of interest

The authors declare no conflict of interest related to this manuscript.

References


