

Guest Editorial

TBI and Aging

As our understanding of Traumatic Brain Injury (TBI) increases it is becoming clear that the impact of TBI is not uniform across the lifespan. The response to a young brain to a TBI is different from that of an old brain. Indeed the literature is beginning to suggest that TBI in the elderly brings to light a complex set of diagnostic, disease management and treatment challenges. Some of these challenges are highlighted in this issue of *NeuroRehabilitation*.

There is an increased focus in the literature on the relationship between TBI and dementia, with some studies suggesting that there is a link between the two diseases and other studies suggesting that there is no relationship between them. The paper by Dams-O'Connor et al. compares the medical history and cognitive function of those with dementia and a history of TBI and those with dementia without a TBI history and reports that there are subtle differences between the groups. This suggests that TBI has characteristics that are unique and that differentiate it from dementia. The implication of this finding supports the exclusion of individuals with a history of TBI in studies of dementia (and vice versa) as their inclusion would make the interpretation of findings difficult.

Interest in TBI in professional athletes has resulted in a need for increased understanding of Chronic Traumatic Encephalopathy (CTE) and methods that can be used to diagnose this condition. Currently diagnosis of this disorder is based solely on post-mortem examination, thereby making the differential diagnosis of TBI, dementia and CTE all but impossible in living individuals. The paper by Victoroff describes the application of the systematic review methodology to the development of provisional diagnostic criteria for CTE. While these criteria require validation, research and the

subsequent endorsement by professional organizations they represent the first step in this process

Although it is becoming increasingly evident that TBI in the elderly triggers a cascade of negative events that results in premature death in some, little is understood about the unique characteristics of those who die. The paper by Hirshson et al. is a step in the clarification of this issue as it reports on the findings of a medical chart review that was completed on a matched sample of those who did and did not die after the first anniversary of their injury. In addition death certificates were obtained on those who died in order to determine if causes of death were related to conditions that were reported while the person was receiving inpatient rehabilitation. It was found that a very limited number of variables differentiated those who lived from those who died and cause of death could be related to a condition that was being treated while the patient was an inpatient in only 11 of the 30 cases studied.

Dijkers et al. examined the characteristics of the inpatient rehabilitation treatments received by individuals with a TBI who were above the age of 65 when they received their rehabilitation. A distinct pattern of care was observed that suggests that the elderly receive less rehabilitation than those who are injured when they are younger.

Alterations in cognitive function are one of the primary indicators of functional decline in the elderly person with TBI. Longitudinal assessment is the ideal approach to both study and manage over time the course of the disease. However cognitive assessments are costly, time consuming and are often a burden on the patient and his/her family. In order to make feasible the large scale follow-up of individuals for either research or clinical purposes alternative approaches to

face-to-face cognitive assessment need to be developed and validated for use with individuals with TBI. The Brief Test of Adult Cognition by Telephone (BTAC) was developed for the purpose and the paper by Gavett et al. applies modern psychometric approaches in order to examine the validity of this new format for completing cognitive assessment. The BTAC has been used in the study of the healthy elderly. Its application to TBI

has the potential of increasing our understanding of the long-term impact of TBI on cognitive function.

TBI in the elderly is increasingly prevalent. Little is known about age specific factors that are related to successful outcomes in the elderly who sustain a TBI. The paper by Drs. Yi and Dams-O'Connor reviews the literature in this important area.

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