Default mode network, connectivity, traumatic brain injury and post-traumatic amnesia

Purpose

This scientific commentary refers to 'Disconnection between the default mode network and medial temporal lobes in post-traumatic amnesia', by De Simoni *et al.*(**doi:10.1093/brain/aww241**).

Participants

Nineteen patients with traumatic brain injury were classified into post-traumatic amnesia and traumatic brain injury control groups, based on their performance on a learning task.

How was the study conducted?

Participants received a resting-state MRI that depicted functional interactions between brain regions. Participants also underwent a detailed neuropsychological test battery. The investigator interpreted the MRIs and correlated those findings with the findings from the neuropsychological testing.

Findings

De Simoni et al's findings provide evidence that memory impairment after traumatic brain injury results from altered brain functional connectivity. Bigler's analysis of the findings highlights the effectiveness of a multimodal approach to neuroimaging assessment of TBI. and provide a roadmap for future methods to better understand how brain injury disrupts brain networks

Military Impact

This study identifies a cause of memory impairment after TBI. Bigler notes that this study may provide a roadmap for future methods to better understand how brain injury disrupts brain networks. Such methods may result in better treatment of TBI in US Veterans and service members.

Bigler E.D. Default mode network, connectivity, traumatic brain injury and post-traumatic amnesia. Brain : A Journal of neurology. 2016 Dec; 139(Pt 12): 3054-3057. PubMed:27913404
https://academic.oup.com/brain/article/139/12/3054/2630012