CENC
Chronic Effects of Neurotrauma Consortium

Peripheral Total Tau in Military Personnel Who Sustain Traumatic Brain Injuries During Deployment

Purpose
To assess peripheral tau levels in military personnel exposed to TBI and to examine the relationship between chronic neurological symptoms and tau elevations.

Participants
Seventy participants with self-reported TBI on the Warrior Administered Retrospective Casualty Assessment Tool and 28 control participants with no TBI exposure

How was the study conducted?
Observational assessment from September 2012 to August 2014 of US military personnel at the Madigan Army Medical Center who had been deployed within the previous 18 months. Plasma total tau concentrations were measured. Classification of participants with and without self-reported TBI was made using the Warrior Administered Retrospective Casualty Assessment Tool. Self-reported symptoms of postconcussive disorder, posttraumatic stress disorder, and depression were determined by the Neurobehavioral Symptom Inventory, the Posttraumatic Stress Disorder Checklist Military Version, and the Quick Inventory of Depressive Symptomatology, respectively. Group differences in tau concentrations in peripheral blood were determined.

Findings
Tau was significantly elevated in the 70 participants with self-reported TBI when compared to 28 controls. Within the self-reported group, tau was higher in those with medical notation of TBI as compared to self-reported TBI only. Total tau in the self-reported group correlated with the severity of post concussive symptoms.

Military Impact
Approximately one-third of military personnel who deploy for combat operations sustain 1 or more traumatic brain injuries (TBIs), which increases the risk for chronic symptoms of post concussive disorder, posttraumatic stress disorder, and depression and for the development of chronic traumatic encephalopathy

Olivera A., Lejbman N., Jeromin A., French L.M., Kim H.S., Cashion A., Mysliwiec V., Diaz-Arrastia R., Gill J. Peripheral Total Tau in Military Personnel Who Sustain Traumatic Brain Injuries During Deployment. JAMA Neurology. 2015 Oct; 72(10): 1109-16. PubMed: 26237304
https://jamanetwork.com/journals/jamaneurology/fullarticle/2398918