

Thursday

Repetitive head impact exposure in patients with frontotemporal dementia spectrum diagnoses

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State of the Art: Repeated head impacts (RHI), including traumatic brain injury (TBI) and collision sport participation, increase dementia risk. Prior studies likely underestimate or do not document RHI/TBI frequency because of low sensitivity data collection methods.

Methodology: We report detailed RHI/TBI data collected via the Boston University Head Impact Exposure Assessment from 78 patients diagnosed at UCSF with bvFTD, svPPA, or nfvPPA (“FTD”; age 68.6 ± 8.3 , 35% female) and 217 controls (“HC”; age 76.8 ± 8.0 , 53% female). We focused on repeated TBI, defined as >3 TBI with qualifying symptoms including loss of consciousness, posttraumatic amnesia, or symptoms frequently associated with concussion (e.g., dizziness/balance problems, nausea, vision changes). RHI through sport was defined by years of American football participation (<5 vs. >5 years). We report associations between RHI/TBI and cavum septum pellucidum (CSP) grade (0-1, “none/mild” vs. 2-3, “moderate”) and length. Analyses were stratified by or adjusted for sex.

Results: TBI was common and more frequent in males (>3 TBI: FTD – Males=22%, Females=5%; HC – Males=14%, Females=6%). Among males, patients with FTD more frequently played >5 years American football (21% vs. 7%; $p=.02$). American football participants were somewhat more likely to have a moderate grade CSP than non-participants (42% vs. 25%, $p=.06$), and >5 years American football participation was associated with longer CSP than non-participants ($p=.02$).

Conclusion: Patients with FTD, especially males, frequently experience RHI/TBI during life. RHI/TBI exposure is associated with higher likelihood of an FTD diagnosis and is possibly associated with changes in the CSP.

Conflicts of interest

N/A