LIMBIC CENC

Key Points Summary

Kelley, C. M., Perez, S. E., & Mufson, E. J. (2019). Tau pathology in the medial temporal lobe of athletes with chronic traumatic encephalopathy: A Chronic Effects of Neurotrauma Consortium study. Acta Neuropathologica Communications, 7(1). doi:10.1186/s40478-019-0861-9

Primary Question this Study Addresses

How are the hyperphosphorylated tau (p-tau) structures in the medial temporal lobe characterized in deceased former contact sport athletes with stage II, III, or IV chronic traumatic encephalopathy (CTE) profiles?

Study Findings That Add to Our Knowledge

There is a CTE stage-dependent increase in pathology (IV>III>II) in AT8 (early tau), TauC3 (late tau), and Aβ (amyloid beta) across all medial temporal lobe (MTL) regions. CA3 tau pathology and MTL lobe dystrophic neurite clusters are possible markers of transition between stages II and III/IV.

AT8 was virtually not observed in stage II, and was associated with age at symptom onset and death. AT8 was not associated with age contact sports began, years played, or retirement age. There was no difference between CTE stage and the highest level of sport played.

How Study Evidence Might Be Used in Practice

There are differing tau profiles in the medial temporal lobe across CTE stages II, III and IV. CA3 tau pathology and medial lobe dystrophic neurite clusters are possible markers of CTE stage transition.

These findings offer new insight into tau pathology in the medial temporal lobe and CTE as a progressive noncommunicative tauopathy.

For more information on mTBI and biomarkers, visit:

Resource

To access the study abstract, click here: Abstract

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