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Highlights

- serum and CSF MAPT levels may be mTBI/TBI marker in postmortem examination
- mTBI involve undiagnosed consequences in forensic autopsy and H&E examination
- BBB opening, glymphatic system or macrophagal transport may be involved in MAPT exit

Abstract

MAPT is a neuronal protein that plays an important role in axonal stabilization, neuronal development, and neuronal polarity. MAPT release into the CSF and blood has been interpreted as indicative of axonal injury as its elevated levels were observed in olympic boxers even after a mild head trauma suggesting minor CNS injuries. In our study we wanted to check the potential relevance of MAPT examination for forensic purposes. The study was carried out using cases of head injury group and cases of sudden death (cardiopulmonary failure, no injuries of the head - control group) provided by forensic pathologists at the Department of Forensic Medicine, Medical University of Warsaw. CSF and blood were collected within 24 hours after death using suboccipital puncture and femoral vein puncture. Serum and cerebrospinal fluid Tau protein concentrations were compared using an enzyme-linked immunosorbent assay (elisa). Brain specimens (frontal cortex) were collected during