Conclusions Contact sports players with exposure to repetitive head impacts did not differ from controls in terms of brain tau burden. Limitations: sample size, heterogeneity in sports type and highest level of participation, and participants with relatively mild cognitive and functional impairments. Additionally, while ^{18}F-MK6240 has high affinity for 3R/4R tau in Alzheimer's disease, its affinity in CTE, particularly important at early stages, remains unclear.

REFERENCE

1. Krishnadas N, *et al*. Case report: 18F-MK6240 tau positron emission tomography pattern resembling chronic traumatic encephalopathy in a retired Australian Rules Football player. doi.org/10.3389/fneur.2020.598980.

17 BIOMARKER INTERPLAY BETWEEN CSF P-TAU AND ^{18}F-PI-2620 PET IN ALZHEIMER'S DISEASE AND 4R-TAUOPATHY

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Objectives Reliable biomarkers for detecting different abnormal tau protein isoforms between neurodegenerative diseases are currently missing. Phosphorylated tau (p-tau) in the cerebrospinal fluid (CSF) is acknowledged as a 3/4R tau biomarker in AD but not in other tauopathies. The positron emission tomography (PET) radiotracer ^{18}F-PI-2620 has the potential to detect abnormal 3/4R-tau in patients with Alzheimer's disease (AD) and 4R-tau in other tauopathies. This study investigates the interplay between tau-PET and CSF p-tau in AD and 4R-tauopathies.

Methods In this cross-sectional analysis, 52 patients with AD, 54 patients with PSP/CBS, and 11 controls underwent lumbar puncture and 0–60 min dynamic ^{18}F-PI-2620 PET scanning. Independent t-tests assessed group differences in standardized uptake value ratios for the 20–40min time window ($SUVr_{20–40}$) and p-Tau. Multiple regression analyses tested the association between $SUVr_{20–40}$ and p-tau and group interactions. ROC analyses evaluated biomarker performance in differentiating patient groups. Quantitative and voxel-wise analyses were performed with R, SPM, and VoxelStats, controlling for age and sex.

Results Patients with AD showed elevated p-tau levels ($p<0.05$; >61 pg/ml) and $SUVr_{20–40}$ in cortical regions, cingulate, insula, hippocampus, and amygdala ($p<0.05$). Patients with clinically suspected 4R-tauopathies showed low p-tau levels but demonstrated high $SUVr_{20–40}$ in the globus pallidus ($p<0.05$), compared to controls and AD. ROC analyses showed high performance at discriminating patients with 4R-tau from those with AD in mainly temporal and parietal regions $SUVr_{20–40}$(60–80%).

Conclusion The specific combination of CSF p-tau levels and ^{18}F-PI-2620 PET SUVR in disease-specific regions facilitates biomarker-guided stratification of AD and clinically suspected 4R-tauopathies.

18 MONASH STATUS EPILEPTICUS STUDY (MOSES): GLASGOW COMA SCORE, AGE AND INPATIENT ONSET, NOT TIME TO TREATMENT, PREDICT MORTALITY IN STATUS EPILEPTICUS

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Background There is ongoing controversy over the predictors of mortality and morbidity in status epilepticus (SE). As a result, many of the mortality prediction tools that have been introduced have failed to gain widespread acceptance.

Objectives To identify predictors of mortality and morbidity in SE in an Australian setting.

Methods We retrospectively reviewed medical records between January 2020 and December 2020 to identify patients diagnosed with SE. D ata regarding in-hospital mortality, modified Rankin Score (mRS), medical history, management and outcomes were collected from the electronic medical records.

Results We identified 157 patients. In-hospital mortality was 20.4% (32/157) and of the 125 that survived, 25.6%(32/125) had increased morbidity. Only 67(42.7%) of patients received first-line therapy, and of these only 35 were given within 20 minutes of first medical contact.

After adjusting for confounders, age, presenting Glasgow Coma Score (GCS), inpatient onset of SE, stroke and cardiac arrest were independently associated with in-hospital mortality. Using a predictive model with age, GCS and inpatient onset, we were able to predict in-hospital mortality with an area under the Receiver Operating Characteristic (ROC) curve (AUC) of 0.81.

Male sex and inpatient onset were independent predictors of increased morbidity. Time to treatment were not predictors of mortality.

Conclusion SE was associated with a high rate of mortality and morbidity in an Australian setting. Less than one-quarter of patients had timely provision of first-line SE treatment. Time to treatment was not associated with short-term mortality. A simple model comprising age, GCS and inpatient onset of SE was able to predict mortality.

19 FUNCTIONAL BRAIN MAPPING WITH TASK INDUCED GAMMA BAND ACTIVITY, DURING STEREOTACTIC-EEG: CURRENT STATE AND FUTURE DIRECTIONS

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Functional brain mapping with direct cortical stimulation (DCS) may be required for patients undergoing stereotactic-EEG (SEEG), as workup towards epilepsy surgery. DCS has several limitations. Task-induced gamma-band-activity (GBA) is an emerging mapping technique that may complement or replace, mapping with DCS. Experience with SEEG-GBA mapping is currently limited.

Objective Provide a comprehensive review of the literature exploring functional mapping during SEEG, with GBA.

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