

Rod little prize session

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THE RELATIONSHIP BETWEEN SERUM BIOMARKERS OF TRAUMATIC BRAIN INJURY (TBI) AND MAGNETIC RESONANCE IMAGING (MRI) IN PATIENTS DISCHARGED FROM THE EMERGENCY DEPARTMENT (ED) WITH A NORMAL ACUTE CT

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10.1136/emj-2020-rcemabstracts.1

Aims/Objectives/Background CT remains the neuroimaging of choice in patients with TBI, however the relative lack of sensitivity as compared to MRI for certain traumatic lesion types, including diffuse axonal injury (DAI), could lead to missing important intracranial findings.¹ Serum biomarkers may allow screening of ED patients, highlighting those who will benefit from MRI and offer a pathway for further imaging in mild TBI patients.

Methods/Design Patients discharged from ED with a panel of 6 biomarkers (GFAP, NFL, NSE, S100B, t-tau and UCH-L1), acute CT < 24 hrs of injury and acute MRI, were extracted from the CENTER-TBI core dataset.² Mann Whitney U test to compare median biomarker levels in relation to +ve or -ve MRI. Unadjusted Area Under ROC (AUC) calculated for detection of MRI abnormality.

Results/Conclusions 80 patients met inclusion criteria, 45 (56%) male, median age 36.5 yr [IQR 24.5–51.3], median GCS 15 [IQR 15–15]. 17/80 (21.25%) had MRI abnormalities. 1 intraventricular haemorrhage, 2 traumatic subarachnoid haemorrhages, 3 intraparenchymal haemorrhages and 13 DAI. Of the biomarkers (median): GFAP (0.28 vs 1.88 ng/ml, $p = 0.002$), NSE (13.08 vs 15.19 ng/ml, $p = 0.013$), S100B (0.06 vs 0.12 µg/L, $p = 0.002$), t-tau (0.82 vs 1.58 pg/ml, $p = 0.002$), UCH-L1 (22.33 vs 57.68 pg/ml $p < 0.001$) were significantly raised in patients with MRI abnormality. Serum NFL concentration was not significant (5.80 vs 8.18 pg/ml, $p = 0.096$). AUC [95% CI] for detection of MRI abnormality: GFAP (0.75 [0.61–0.89]), NFL (0.63 [0.48–0.79]), NSE (0.70 [0.55–0.85]), S100B (0.75 [0.61–0.90]), tau (0.75 [0.61–0.89]), UCH-L1 (0.82 [0.69–0.95])

The results demonstrate potential utility in several acute serum biomarkers for screening of patients with a negative CT. Fair discrimination for detection of MRI pathology in this cohort was demonstrated by GFAP, NSE, S100B, total tau and UCH-L1. Further prospective analysis is required to assess the utility for biomarkers to determine MRI requirement in an ED population.

REFERENCES

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MANAGEMENT OF SPORTS-RELATED CONCUSSION IN UK EMERGENCY DEPARTMENTS: A MULTI-CENTRE STUDY

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10.1136/emj-2020-rcemabstracts.2

Aims/Objectives/Background It is necessary for those working in emergency departments to have adequate knowledge and delivery of current sport-related concussion (SRC) management protocols including identifying patients with concussion, managing their symptoms, giving appropriate advice with regards to return to play and referring those at risk of further injuries to an appropriate service.

This study aimed to establish the current practice, knowledge base and views towards SRC management of emergency department clinicians who have trained or are currently training in emergency medicine in the North West of England.

Methods/Design This study was a multi centre, cross sectional study of 111 emergency department clinicians (EDCs) working across 15 centres in the North West of England A 21 item online survey was issued. The key questions focused on the advice given to patients on discharge, the importance of cognitive and physical rest, and knowledge of GRTP.

Results/Conclusions Approximately, 37% of the population responded to the invitation, with 111 responses included in this study. Only 27% of total respondents were aware of the Consensus Statements of Concussion in Sport guidelines, whilst 45% were unaware of any SRC guidelines. 57% of respondents had heard of a graded return to play (GRTP) protocol. Physical rest following an SRC was advised by 95% of respondents with 61% advising concomitant cognitive rest and 42% of respondents providing specific written advice. 90% of clinicians had not received any SRC training.

There is a lack of knowledge amongst EDCs in the North West of England in managing and providing discharge advice according to recommendations for patients with SRC. This is likely a consequence of the limited training that these clinicians have received in managing SRC and suggests further work needs to be undertaken to educate EDCs on current SRC management guidance to ensure appropriate care and discharge advice is given to patients.

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PALLIATIVE CARE IN THE EMERGENCY DEPARTMENT – A SCOPING REVIEW

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10.1136/emj-2020-rcemabstracts.3

Aims/Objectives/Background The World Health Organisation (WHO) estimate that 40 million people a year globally require palliative care, and this need is expanding. The needs of