

## 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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**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.<sup>1</sup> 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.<sup>2</sup> 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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**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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**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

palliative patients are not optimally met in the Emergency Department (ED), in part due to crowding and exit-block. This is further compounded in an ageing population with increasingly complex chronic diseases. Palliative care in the ED is one of the top five research priorities from the Royal College of Emergency Medicine and is often an underestimated part of the ED workload. These patients need to be recognised early and their care considered holistically. This project aims to define the scale of palliative care demand on EDs, describe the care these patients receive, and consider whether we provide truly palliative care for these patients.

**Methods/Design** Data were collected from electronic and written ED records for all patients meeting the inclusion criteria who attended over a 14-day period. Patient records were identified by manually reviewing all electronic records and identifying coding that corresponded to the WHO list of palliative conditions. Demographic, attendance and clinical data were anonymised and analysed descriptively.

**Results/Conclusions** Over the study period, 5% (208/4126) of all ED attendances presented with palliative conditions. This figure is likely to be an underestimate, as electronic systems in this department are not linked to e-notes and written records accompany the patient's hospital journey. Average time in department was 461 minutes (IQR 274.5 – 621.5). 77% (93/121) of these patients were admitted to hospital, with 96% of those admitted to the Medical Assessment Unit. Only 7% (8/121) left the department with a completed Treatment Escalation Plan (2 of these were pre-existing). This scoping data shows that a small but significant proportion of ED patients have incurable conditions and it may be worth targeting quality, not quantity, of life.

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#### THROMBOTIC COMPLICATIONS IN PATIENTS WITH COVID-19 REQUIRING HOSPITALISATION: A SINGLE CENTRE PROSPECTIVE SERVICE EVALUATION

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**Aims/Objectives/Background** Early experience of the coronavirus pandemic has led to concerns regarding hypercoagulability and increased rates of venous thromboembolic (VTE) disease. As a result, many centres have changed front door thromboprophylaxis risk assessment and prescribing practice. There is no clear evidence that such new approaches are safe, or improve patient outcomes.

We sought to establish the incidence of thrombotic complications in all hospitalised patients with confirmed COVID-19, at a UK thrombosis exemplar centre.

**Methods/Design** A single site prospective service evaluation (Ref: S20HIP17). We identified all patients with COVID-19 who were hospitalised between 1st March and the 31st May 2020, encompassing the UK acceleration, peak and deceleration phases of the pandemic.

Standard risk assessment and weight adjusted pharmacological thromboprophylaxis were conducted in accordance with previous national and local guidelines.

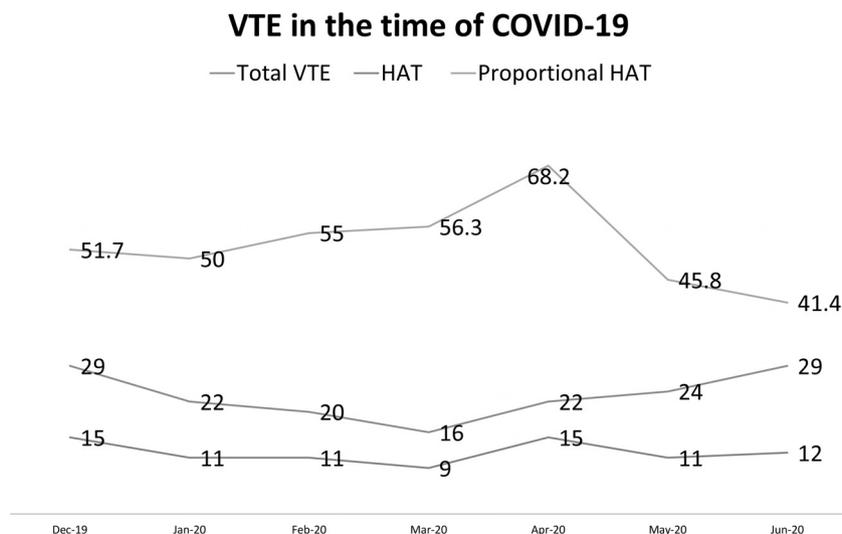
We report follow up data as of the 1st July (minimum 4 weeks post diagnosis), using an established method for national VTE reporting metrics.

**Results/Conclusions** A total of 528 hospitalised patients had confirmed COVID-19 during the study period, of which 74 (14.0%) were admitted to critical care. Mean age was 69.6 (SD 16.7) and the median duration of admission 7 days (IQR 16). Mortality was 35.6%.

We identified 12 VTE positive episodes at follow up, including 9 pulmonary emboli (PE) and 3 deep vein thromboses (DVT). Over 60% of PE events were isolated segmental or subsegmental thrombi, suggestive of 'immunothrombosis' in situ and of questionable clinical significance. VTE event rates for our population were 2.3% overall and 6.8% for those admitted to critical care.

Rates of VTE did not appear to differ from pre-pandemic levels (figure 1).

We did not find increased rates of clinically significant VTE events in hospitalised patients with COVID-19. Our findings raise questions regarding the merits of unvalidated risk assessment tools and increased thromboprophylaxis dosing strategies in COVID-19 patients.



**Abstract 274 Figure 1** Venous thromboembolic (VTE) events over time and proportional hospital acquired thrombosis rates(HAT)