Results The highest proportions (26%) of white matter events were observed within the bilateral corticospinal tracts. The highest proportions (~10%) of grey matter events were observed in areas including the bilateral superior temporal, precentral, and lateral occipital cortices. Subcortical events were most frequently identified in the PAl

ladium. The application of a mathematical network diffusion model suggested that the spatial pattern of the small neurol

egical events in COVID-19 can be modelled with a linear diffusion of spread from epiconetres in the bilateral cerebellu

m and basal ganglia (Pearson’s r = 0.41, p < 0.001, corrected).

Conclusions To our knowledge, this is the first study to sys
tematically characterise the spatial distribution of small neuro-
egical events in COVID-19 patients and test whether the spatial distribution of these events can be explained by a lin-
er diffusion spread model. As such, initial sub-cortical events which manifest as altered consciousness could be expected to be followed by later cortical events manifesting as altered sen-

somotor functioning.

REFERENCES

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CASE-CONTROL STUDY OF RISK FACTORS FOR STROKE AMONG CRITICALLY-ILL PATIENTS WITH SARS-COV-2: AN ANALYSIS OF THE COVID-19 CRITICAL CARE CONSORTIUM (CCCC) GLOBAL REGISTRY

Objective COVID-19 has been identified as a risk factor for severe cerebrovascular complications, albeit mostly in small patient populations, limited to specific regions, and including all severities of disease. Utilising the largest database of critically-ill COVID-19 patients, we investigated risk factors for stroke in intensive care unit (ICU) COVID-19 patients.

Methods Data for this matched case-control study were extracted from a large international registry of adult COVID-19 patients requiring ICU admission. Patients with imaging-confirmed cerebrovascular events identified following ICU admission were compared against five controls per case, matched for demographics, morphometrics, illness severity, and ICU days. Expert consensus determined key clinical and labo-

ratory variables for risk assessment.

Results From January 1-December 31 2020, 2,715 ICU patients were registered across >370 sites spanning 52 countries; acute stroke was identified during the ICU stay in 59 (2.2%); 27(46%) haemorrhagic, 19(32%) ischaemic, 13(22%) unspecified. Stroke patients had higher SOFA and APACHE scores, more frequent hypertension and cardiovascular disease, and more often required mechanical ventilation, vasopressors, and ECMO. Diabetes, hypertension, smoking, and Caucasian ethnicity were identified as risk factors for ischaemic versus haemorrhagic stroke and being stroke-free. Ethnicity (Hispanic or black), higher PaO2, and extracorporeal membrane oxygenation (ECMO) were significant risk factors for haemorrhagic stroke. Anticoagulation had no association with either stroke subtype.

Abstracts