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of early diagnosis, personalized treatment and prevention strategies\(^*\).

No conflict of interest.

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P.786

An increase in central nervous system signaling proteins as a criterion for the severity of schizophrenia

E. Dmitrieva\(^1\), L. Smirnova\(^1\), A. Semke\(^1\), V. Zgoda\(^2\), S. Ivanova\(^3\)

\(^1\) Tomsk National Research Medical Center of the Russian Academy of Sciences, Mental Health Research Institute, Tomsk, Russia

\(^2\) Institute of Biomedical Chemistry, Laboratory of Systems Biology, Moscow, Russia

Background: Nowadays it has become clear that the essential element of molecular processes distortion in psychiatric disorders could be the changes in protein profile. The issue of creating a proteomic profile characteristic of a particular nosology remains relevant for assessing the pathogenetic pathways involved in the development of the disease. At present, the search for peripheral biomarkers, which can be used for differential diagnosis and prognosis of therapy (theranostic), becomes particularly important.

Methods: There was analyzed the serum proteome of 13 healthy donors and 37 patients with schizophrenia: 22 with lead negative symptoms and 15 with lead positive symptoms. Blood serum samples were obtained from patients in the acute stage before the start of the study. This was done in order to get clean samples before starting their course of therapy. The serum was purified by affinity chromatography from six major proteins (albumin, immunoglobulin G, immunoglobulin A, antitrypsin, transferrin, haptoglobin). The proteins were separated by vertical electrophoresis in a 12% polyacrylamide gel according to Laemmli’s method. Then, after trypsinolysis and peptide extraction from the gel, the proteins were identified by HPLC / mass spectrometry on the Q-exactive HF mass spectrometer (Thermo Scientific). Quantitative LC-MS-SRM analysis was performed on QQQ TSQ Vantage (Thermo Scientific) with labeled peptide standards. Statistical analysis was performed using STATISTICA version 10 (StatSoft, Tulsa, OK, USA).

Results: According to the results of the qualitative mass spectrometric analysis revealed protein involved in neurotransmission and protein of neuronal receptor were selected: Metabotropic glutamate receptor 6 (mGluR6), Doublecortin-like kinase 1 (DCLK1). Then these proteins analyzed quantitative mass spectrometry with labeled peptide standard. Kruskal-Wallis test ANOVA by Ranks showed significant differences between three studied groups for protein DCLK1 (p = 0.0018) and for protein mGluR6 (p = 0.04). In addition, the amount of mGluR6 and DCLK1 was significantly higher in patients with lead negative symptoms compared with lead positive symptoms (p = 0.04; p = 0.004). In both groups, there were no significant differences between the control group and patients with lead positive symptoms. Conclusions: An assessment of the specific minor proteins showed an increase in their quantity depending on patients with lead negative symptoms. Identified proteins control the migration of neurons in the developing brain. They can also participate in the functions of the mature nervous system. DCLK1 kinase involved in the calcium signaling pathway. mGluR6 is a G-protein-bound glutamate receptor, which triggers signaling and modulates the activity of downstream effectors such as adenylate cyclase, and control of calcium channel. Thus, the identified proteins can be positioned as a prognostic protein to determine the severity of the disease.

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Neurological manifestations of intensive care patients with COVID-19 in a South-London Hospital: a single centre observational study

B. Shurovi

University hospital lewisham, CRITICAL CARE, LONDON, United Kingdom

Introduction: In December 2019, many unexplained pneumonia cases were noted in Wuhun, Chine, which rapidly spread to other parts of the country, then to Europe, North America and Asia. In March 2020, Covid-19 secondary to Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) was acknowledged as a global pandemic. Several studies have described clinical manifestations including fever, cough, diarrhoea, lethargy and fatigue. This study reports the above and neurological manifestations of patients with COVID-19.
Methods: This retrospective, observational study included patients with COVID-19, managed in a single centre intensive care unit (ITU). This study included seventy-six hospitalised patients in the ITU with laboratory confirmed diagnosis of SARS-CoV-2. Data was collected on patient characteristics, laboratory, radiological and ICU management, together with their neurological manifestations during their admission and their ongoing symptoms on discharge. This study reports the data as median (interquartile range).

Main Outcomes and Measures: Clinical Data was extracted from electronic medical records, nursing records and radiological examinations for all patients. Data was collected on age, sex and co-morbidities. Data of all neurological symptoms were recorded from either initial Emergency Medicine clerking or Medical clerking or ITU admission clerking. If patients were transferred, the data were collected from the database that connected the south London hospitals. Neurological Manifestations fell broadly into 3 categories: central nervous system manifestations (seizure, headache, impaired consciousness/low GCS, delirium, acute cerebrovascular disease and ataxia etc), peripheral nervous system (anosmia, ageusia, vision impairment and nerve pain etc) and skeletal muscular injury manifestations.

Results: Of 85 patients (57.3 years [49.4-64.2], 75.3% male) were followed up for 34 days (26-40). The most common comorbidities were hypertension (51.8%), obesity (48.7%), and type 2 diabetes (31.8%). COVID-19 first noted 8 days (6 - 10) prior to ICU admission and presented to the hospital with shortness of breath (89.4%), fever (82.4%), and cough (81.2%). Classical radiological representation was bilateral infiltrates on chest X-ray, lymphopenia, and raised C-reactive protein and ferritin were typical. 81.2% required invasive mechanical ventilation (IMV). Overall, 76 patients had neurological manifestations and fit in the inclusion criteria. In patients with CNS manifestations, the most common reported symptoms were confusion (23 [30.3%]) and headache (11 [14.5%]). In patients with PNS symptoms, the most common reported symptoms were anosmia (2 [2.6%]) and ageusia (3[3.9%]). The most common skeletal impairment was decline in functional ability (21 [27.6%]) and gait instability (10 [13.2%]). 44.7% of patients had died by the end of the follow-up period, 30.6% had been discharged from hospital, 14.1% had been discharged from ICU but remained in hospital and 10.6% remained in ICU. ICU length of stay was 14 days (9 - 23).

Conclusion: This study reports few common neurological manifestations in ITU patients of a South London cohort with COVID-19. The research is still ongoing about how COVID-19 causes all of these neurological manifestations, however, if clinicians are aware of this, it will allow them to acknowledge that the symptoms are potentially due to COVID-19 and appropriate management plan can be taken.

No conflict of interest

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P.792
The facilitatory effect of the selective Piezo1 agonist Yoda1 on second-order trigeminovascular neurons in vivo

A. Dolgorukova1, J.E. Isaeva1, O.A. Lyubashina1,2, E. Verbitskaya1, R.A. Giniatullin1, A.Y. Sokolov1,2
1Pavlov First Saint Petersburg State Medical University, Valdman Institute of Pharmacology, Saint Petersburg, Russia
2Pavlov Institute of Physiology of the Russian Academy of Sciences, Laboratory of Cortico-Visceral Physiology, Saint Petersburg, Russia
3University of Eastern Finland, A. I. Virtanen Institute for Molecular Sciences, Kuopio, Finland

Background: Despite the impressive progress made over the past decades, some aspects of migraine pathogenesis are still elusive. The molecular mechanisms contributing to the activation and sensitisation of the trigeminovascular system - events that are closely related to the headache phase of migraine, are of particular importance. Recently, it was proposed that Piezo1 ion channel may be involved in migraine-related mechanisms [1]. Since Piezo1 is expressed in endothelial cells [2] as well as in trigeminal ganglion neurons [3], the opening of this channel may contribute to the activation of both the vascular and neuronal component of the trigeminovascular system. The latter has recently been confirmed for the peripheral trigeminal afferents [3], but whether Piezo1 activation can affect the central trigeminal-vascular neurons is yet to be defined.

Objective: To evaluate the effect of Piezo1 activation by its chemical agonist Yoda1 on the central trigeminovascular neurons using a well-established electrophysiological migraine model in vivo.

Methods: The experiments were conducted on 8 anaesthetised male Wistar rats. Surgical preparation of animal included intubation, femoral artery and vein cannulation, fixation in a stereotaxic frame, exposing of the parietal dura mater (for the electrical stimulation of meningeal afferents) and spinal cord (for recordings of neuronal activity in the trigeminocephalic complex). The rats were allowed to rest for at least 40 min before the start of extracellular recordings. When a neuron responsive to the electrical stimulation of the dura mater and mechanical stimulation of facial skin was identified, we measured its ongoing and electrically-evoked activity before and during 30-min applications of Yoda1 (25 μM) and its vehicle (0.1% DMSO) to the exposed dura mater (1 neuron was tested in each rat). Yoda1 and the vehicle were applied in random order using a balanced cross-over design and a 10-min washout. The between-group difference at baseline was compared by the Wilcoxon Rank-Sum Test. To evaluate the effects of Yoda1 versus the vehicle and over time, we used a mixed-effects ANOVA.

Results: The neuronal activity did not significantly differ between the experimental groups before drug applications (p > 0.05). The ongoing activity increased after Yoda1 treatment maximally to 114.1%[107.5 - 126.1%] (median[Q1 - Q3]) of the baseline at 10th min (n = 8). The mixed-effects ANOVA revealed a significant effect of the treatment...