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slight reduction in cell density of CA1/CA2/CA3 hippocampal areas (H&E staining). No differences in the cytoarchitecture of cerebral cortex and thalamus were found. GC-related changes on the functional level were observed: a decrease in the amplitude of high-K+ stimulated excitosys (by 57.5%, p = 0.0023), reflecting impairments in synaptic vesicle fusion competence; lowering rate of Ca2+ dependent fusion of isolated synaptic vesicles with synaptic plasma membrane (-29.53%, p = 0.01 vs. control). This might be due to an increase in total cholesterol level in synaptic plasma membranes from rat cerebral hemispheres (0.81 ± 0.07 vs. 0.65 ± 0.05 μmol/mg protein in control). GC-induced morphofunctional changes were associated with a depletion of 250HD circulating pool - by 3.2-fold in serum (30.0 ± 3.1 nmol/l), 2-fold - in CSF (16.0 nmol/l), 2.2-fold in brain homogenates (8.64 ng/g), elevated VDR (protein +41.2 ± 3.5%, mRNA +660.1 ± 20.7%), lowered CYP24A1 (-82% ± 7.5%), and VDBP (-54.5 ± 6.5%) contents. Prednisolone increased OPG (protein +55.2 ± 5.4%, mRNA +29% ± 3.4%) and RANK (protein +24.3 ± 1.4%, mRNA +329.0 ± 20.1%) levels, while RANKL mRNA level was unchanged vs. control. GC-related impairments in the distribution of RANK / VDR-positive neurons and OPG-positive glial cells in cortex and hippocampus were observed, indicating a close relation between VD-auto/paracrine system and RRO pathway. VD induced a decrease in perikaryon and nucleus areas in CA1 section (-68.12% and -73.79%, p < 0.001) vs. prednisolone. No significant differences in the perikaryon and nucleus mean areas of CA2/CA3 neurons were detected. Restoration of depolarization-induced synaptic vesicle release after VD treatment (+103.07%, p < 0.001 vs. prednisolone) evidenced that GC-induced changes in stimulated secretion are reversible. VD treatment restored 250HD (111.4 ± 13.2 nmol/l in serum, 12.9 ng/g in brain tissue) and VDBP levels, down-regulated VDR expression (protein - 3 fold, mRNA - 2-fold vs. prednisolone), led to RRO-signaling restoration by normalizing RANK level, elevating RANKL mRNA (+210.1 ± 18.5%) and lowering OPG protein content (-23.9 ± 1.3%) vs. prednisolone.

Conclusions: GC-induced morphofunctional changes is associated with impaired cholesterol metabolism, weakening of RRO signaling, linked to abnormalities in VD-auto/paracrine system. Restoration of RRO signaling by normalizing VD-status may be effective in counteracting GC-induced brain structural/functional changes.

No conflict of interest

References

[1] Glasnović, A., O’Mara, N., Kovačić, N., Grčević, D., Gajović, S., 2020. RANK/RANKL/OPG signaling in the brain: a systematic review of the literature. Frontiers in neurology 11, 590480.

do: 10.1016/j.euruneuro.2021.10.532

P.0564

Active suicidal ideation one year after the beginning of COVID-19 pandemic in a large Spanish sample: risk and protective factors

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Introduction: The influence of coronavirus disease 2019 (COVID-19) pandemic over mental health and suicidal behavior has been described worldwide [1,2]. Active suicidal ideation (ASI) and its associated risk and protective factors after one year of COVID-19 pandemic need to be measured and described in order to easy design effective mental health strategies.

Objectives: To assess the prevalence of active suicidal ideation in a sample of the general Spanish population after one year of COVID-19 pandemic and to characterize factors associated with active suicidal ideation.

Methods: Cross-sectional study based on an anonymous self-report online survey consisting of sociodemographic and clinical questions. The survey was conducted between March 16 and 31, 2021. It was completed by 5,646 participants, aged 18 and over, from all over Spanish territory.

The Spanish versions of Depression, Anxiety and Stress Scale (DASS-21), the Dep5 and Anx5, and the Paykel Suicidal Ideation Scale (PSS) were used to assess psychological impact and suicidal ideation.

The sample was divided into two different groups based on PSS responses: “active suicidal ideation” (ASI) (positive answer to questions 3 and/or 4) and “no active suicidal ideation” (NASI) (negative answer to questions 3 and 4).

Logistic regression models (forward stepwise selection) were estimated to determine the independent factors associated with having ASI. Cohen’s d equivalence for Odds Ratios (OR) has been included. Due to multiple comparisons and to avoid inflation in Type I error, the level of statistical significance was set at α ≤ 0.001 (two-tailed).

Results: The total sample included 5,654 respondents [mean age (SD) = 39.65 (12.65); females: n = 4,575 (80.9%)]. From the total sample, 415 participants (7.3%: IC 95% [6.7-8.0]) presented ASI during the last month. A logistic regression model, including all significant variables from bivariate analyses, was run to assess variables associated with ASI.

5414
Risk factors for ASI were: income reduction > 50% [OR (IC 95%) = 1.994 (1.317-3.020), p = 0.001], history of past or current mental disorder [OR (IC 95%) = 1.469 (1.067-2.023), p = 0.018; OR (IC 95%) = 3.161 (2.468-4.048), p < 0.001, respectively], insomnia [OR (IC 95%) = 1.850 (1.404-2.437), p < 0.001] and personal history of suicide attempt [OR (IC 95%) = 3.779 (2.681-5.327), p < 0.001].

Protective factors against ASI were: older age [OR (IC 95%) = 0.968 (0.958-0.978), p < 0.001], living with one or more than one other person [OR (IC 95%) = 0.537 (0.385-0.747), p < 0.001; OR (IC 95%) = 0.634 (0.466-0.863), p = 0.004, respectively] and neutral or sleep satisfaction score [OR (IC 95%) = 0.672 (0.510-0.886), p = 0.005; OR (IC 95%) = 0.472 (0.349-0.638), p < 0.001, respectively].

Conclusion: The estimated prevalence of ASI in this large sample of Spanish general population was significantly high. In addition, significant income reduction, history of past or current mental disorder, insomnia or history of suicide attempt have been described as risk factors associated with ASI, whereas older age, neutral or sleep satisfaction act as protective factors. The results from this study provide useful information which may help to identify vulnerable population characteristics.

No conflict of interest

References

[1] Sáiz, P.A., de la Fuente-Tomas, L., García-Alvarez, L., Bobes-Bascarán, M.T., Moya-Lacasa, C., García-Portilla, M.P., Bobes, J., 2020. Prevalence of Passive Suicidal Ideation in the early Stage of the Coronavirus Disease 2019 (COVID-19) Pandemic and Lockdown in a Large Spanish Sample. The Journal of Clinical Psychiatry 81.

[2] Shi, L., Que, J.-Y., Lu, Z.-A., Gong, Y.-M., Liu, L., Wang, Y.-H., Ran, M.-S., Ravindran, N., Ravindran, A.V., Fazel, S., Bao, Y.-P., Shi, J., Lu, L., 2021. Prevalence and correlates of suicidal ideation among the general population in China during the COVID-19 pandemic. European Psychiatry 64.

doi: 10.1016/j.euroneuro.2021.10.533

P.0565
Calcium salt of N-(5-hydroxynicotinoyl)-L-glutamic acid weakens depressive-like behavior and Parkinsonian syndrome in experiment on rodents

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Modern models of neuroglial interactions substantiate the role of glia in the pathogenesis of neurodegenerative diseases such as depression or parkinsonian syndrome. Excitatory neurotransmitter glutamate is involved in neuroglial interactions and the pathogenesis of neurodegenerative diseases. Potency of N-(5-hydroxynicotinoyl)-L-glutamic acid calcium salt (ampasse, AMP) to normalize the composition of glial cells in the sensorimotor cortex in rats with neurodegeneration suggested that AMP may be a potential antidepressant and antiparkinsonian agent. Here we studied the antidepressant and antiparkinsonian properties of AMP (0.1-30 mg/kg, intraperitoneally) in male rodents. For evaluation of antidepressant effects, the Porst’s tests in outbred mice (20-22 g) were carried out. Antiparkinsonian effects were studied in C57Bl/6 mice (24-26 g) to be treated with pro-neurotoxin 1-methyl-4-phenyl-1,2,3,6-tetrahydropyridine (MPTP, 30 mg/ kg) for tremor, rigidity and hypokinesia. Haloperidol (1 mg/kg) was used to model catalepsy in outbred rats (250-280 g), araceline hydrobromide (25 mg/kg) was used to induce tremor of cholinergic nature in outbred mice (20-22 g). In Parkinsonian model, passive control mice were injected with 0.9% NaCl sequentially twice, and active control animals were sequentially injected with saline and drugs simulating pathology. Amiptyline (10 mg/kg) was used as a reference drug to compare AMP antidepressant properties, amantadine sulfate (AmS) (20 mg/kg, PC-Mertz) - as the reference drug for AMP antiparkinsonian effects. Using GraphPad Prism 7.0 software differences between the groups were determined by ANOVA followed by Student’s t test with Bonferroni correction. In swimming tests, the immobilization periods in control mice were 244.3±2.4 sec. AMP doses (20 and 30 mg/kg) reduced immobilization periods by 15 and 25% respectively compared to the active controls while amitriptyline reduced the immobilization time by 45%. Arecoline caused tremor with a latency of ∼0.3±0.15 min and a duration of 14.2±1.1 min. Neither AMP, nor AmS attenuated arecoline-evoked tremor. In MPTP-treated mice tremor appeared in 1.4±0.2 min and lasted for 18.3±4.2 min. AMP and AmS did not affect tremor duration but increased its latency. AMP (0.1 mg/kg) increased tremor latency by 75%, which was comparable with the effect of AmS. AmS and AMP (0.1 and 10 mg/ kg) weakened the MPTP- caused rigidity by 18-30% in comparison with saline. AMP (0.1 mg/ kg) restored motor activity in mice treated with MPTP to 20% of the level observed in active control mice and was superior to AmS and other studied AMP doses. The antictalpetic effect AmS and 0.1 mg/kg AMP persisted in 120 and 180 min after haloperidol injection. In 120 min, the effect of high doses of AMP on catalepsy was not observed, and in 180 min, AMP was inferior to AmS. Thus, AMP caused a dose-dependent antidepressant effect, somewhat inferior to amitriptyline. AMP exhibited antidepressant properties in the higher doses (30 mg/kg) and antiparkinsonian properties in the lower dose (0.1 mg/kg). In the model of parkinsonian syndrome caused by MPTP, AMP in a low dose of 0.1 mg/kg was more effective than AmS in a dose of 20 mg/kg in correction of hypokinesia and was comparable to that in correction of stiffness and tremor.

No conflict of interest

doi: 10.1016/j.euroneuro.2021.10.534