

PUBLICATIONS

AFFECTIVE DISORDERS IN EPILEPSY AS A MULTIFACTORIAL RISK PHENOTYPE: IMPLICATIONS FOR CEREBROVASCULAR DISEASE PREVENTION

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Epilepsy is a chronic neurological disorder frequently accompanied by affective and cognitive comorbidities. These disorders may be associated with systemic inflammation, neuroendocrine dysregulation, and metabolic abnormalities, which are also relevant to cerebrovascular risk. Identification of such interconnected mechanisms may contribute to integrated strategies for prevention and control of neurological and cerebrovascular diseases in Central Asian populations.

To characterize clinical, psychometric, inflammatory, neuroendocrine, and metabolic abnormalities associated with affective disorders in patients with epilepsy and to assess their potential relevance for cerebrovascular disease prevention.

A total of 132 patients with epilepsy were examined: 52 patients with affective disorders (AR+) and 80 without affective disorders (AR–). Anxiety and depression were assessed using HAMA and HDRS, cognitive function by MMSE and WCST, and psychopathological burden by SCL-90. Serum levels of IL-6, TNF- α , IL-10, cortisol, prolactin, homocysteine, and vitamin B12 were determined.

Patients with AR+ demonstrated significantly higher anxiety and depressive symptoms: HAMA 24.8 ± 6.5 vs 11.5 ± 5.2 and HDRS 21.6 ± 5.4 vs 9.2 ± 4.1 , respectively ($p < 0.001$). Cognitive function was reduced in the AR+ group, with MMSE 25.6 ± 2.5 vs 27.8 ± 1.9 ($p < 0.05$) and a higher number of perseverative errors on WCST (18.4 vs 11.2 ; $p < 0.01$). A significant pro-inflammatory shift was observed, with increased IL-6 (9.8 ± 3.4 vs 6.2 ± 2.9 pg/mL; $p < 0.01$) and TNF- α (15.6 ± 5.2 vs 11.3 ± 4.8 pg/mL; $p < 0.05$) and reduced IL-10 (2.1 ± 0.7 vs 3.0 ± 1.0 pg/mL; $p < 0.05$). AR+ was also associated with increased cortisol (580 ± 120 vs 450 ± 100 nmol/L; $p < 0.01$), prolactin (24.5 ± 8.0 vs 19.0 ± 6.5 ng/mL; $p < 0.05$), and homocysteine (15.2 ± 4.5 vs 11.8 ± 3.6 μ mol/L; $p < 0.01$) and decreased vitamin B12 (240 ± 80 vs 320 ± 90 pg/mL; $p < 0.05$).

Affective disorders in epilepsy are associated with a complex biological phenotype combining cognitive impairment, pro-inflammatory activation, neuroendocrine dysregulation, hyperhomocysteinemia, and vitamin B12 deficiency. These interconnected abnormalities may contribute to vascular and cerebrovascular vulnerability. Their early identification and correction may therefore support integrated prevention of cerebrovascular complications and improve neurological care in Central Asian populations. A multidisciplinary prevention strategy integrating neurological, psychiatric, metabolic, and vascular assessment may be particularly relevant for regional disease control.