KYNURENINE PATHWAY ALTERATIONS IN MIGRAINE- IDO ACTIVITY AND GENETICS

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Background: The possible role of the kynurenine pathway has not yet been investigated in migraine. The prevalence of psychiatric comorbid conditions is high in migraineurs, but the exact pathomechanism is not understood.
Aim: To investigate kynurenine metabolites and IDO genetics, and to assess the prevalence of psychiatric comorbidity.
Method: 47 migraine patients and 43 healthy controls have been recruited. Validated questionnaires have been used to assess depression, anxiety, stress, and quality of life. Serum kynurenine metabolites have been analyzed by HPLC. Three SNPs of the IDO gene have been investigated in 140 migraine patients and 145 healthy controls, using Taqman probes.
Results: Migraineurs presented significantly lower tryptophan levels than controls. IDO activity, calculated by serum kynurenine/tryptophan ratio, was significantly increased in patients with depressive symptoms, while in non-depressed migraineurs IDO activity was not statistically different from controls. Depressive symptoms are present in 31% of migraineurs. Migraine patients perceive a significantly impaired quality of life, which strongly correlated with the presence of psychiatric comorbidity. None of the three investigated SNPs, proved to be directly associated with migraine.
Conclusion: Depression is highly prevalent among migraine patients, and contributes to the worsening of quality of life. The alterations in tryptophan-kynurenine metabolism might contribute to pathomechanism of migraine and depression comorbidity.
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