

Hypermetabolism in als: complication or part of pathogenesis?

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Hypermetabolism is one of not motor-related signs of ALS. Hypermetabolism in ALS has not been fully elucidated, but its signs could be detected before first motor symptoms of ALS. The aim of our study was to investigate the prevalence and severity of hypermetabolism in early stage ALS patients of the Russian population and try to clarify its correlation with neurodegeneration. The study concerned 40 ALS patients and 20 patients of the control group. Hypermetabolism was valued via questionnaires, anthropometric and biochemical dates (blood levels of albumin, lipoproteins and zinc-alpha 2-glycoprotein, ZAG, as an adipokine). The rate of neurodegeneration was estimated by clinical and anamneses' dates and levels of marker (phosphorylated heavy chains of neurofilaments, pNfH). Concentrations of markers were measured in CSF and blood of patients by ELISA. According to our investigation hypermetabolism was diagnosed about in half of cases of early stage ALS. Levels of pNfH were significantly different in ALS and control groups: 350,2 pg/ml [150; 500] и 65,2 pg/ml [48; 148] correspondingly. Levels of ZAG were not significantly different: 48,9 mcg/ml [40,7; 60] in ALS and 45,6 mcg/ml [42,6; 49,9] mcg/ml in control group. Also a slight positive correlation of pNfH and ZAG in CSF was detected. Prevalence of hypermetabolism in early stage ALS patients of Russian population is high and comparable with previously published dates. Results of biochemical study show that hypermetabolism is involved in pathogenesis of ALS already in an early stage of the disease, but further studies are needed to determine its exact role.