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ABERRANT TYROSINE TRANSPORT - A BIOLOGICAL MARKER FOR AN INHERITED SUSCEPTIBILITY TO SCHIZOPHRENIA

L. Flyckt, G. Edman

Research and Development Section, Psychiatry Northeast, Karolinska Institute, Dept of Clinical Neurosciences, Stockholm, Sweden

A biological marker may serve as a link between the clinical manifestation of schizophrenia and the underlying susceptibility gene (s) and it may also serve the purpose to delineate subgroups or "endophenotypes". Aberrant tyrosine transport across the cell membrane in patients with schizophrenia is such a biological marker. Previous studies have showed a reduced tyrosine transport across the fibroblast cell membrane in patients with schizophrenia. The experiments were performed in fibroblasts that had grown for several generations in vitro. Thus, the aberrant tyrosine transportation is likely to reflect a genetic trait that is transmitted through several cell generations. An association between aberrant tyrosine transport across fibroblast membrane and neurocognitive dysfunction was found for patients with schizophrenia in a previous study indicating a connection between deficient tyrosine transport and cognitive dysfunction. The aim of the present study was to investigate the occurrence of aberrant tyrosine transport across the fibroblast membrane in first-degree relatives to patients with schizophrenia to find indications of inheritance. Significant correlations between patients and their mothers were found regarding aberrant tyrosine transport and, furthermore, the mothers with aberrant tyrosine transport showed signs of reduced cognitive functioning. Maternal inheritance is a possible mode for genetic transmission of susceptibility to schizophrenia for a subgroup of patients with low cognitive functioning.