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FINDINGS OF SPECTRUM FUNCIONAL MRI (SF-MRI) IN SCHIZOPHRENIA

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Introduction: N-acetil-aspartate (NAA) is located inside the soma and dendrites. Its believed to be an indirect indicator of the metabolic activity of these cells. Phosphomonoesters (PME) are involved in synthesis of neuronal membranes and phosphodiesterases (PDE) in its degradation. Glutamine, an aminoacid produced by glial cells, is transported into the neurone for its transformation into glutamate and gamma aminobutyric acid.

Methods: Review clinical trials performed on schizophrenic patients with SF-MRI, with ^{31}P y ^1H , to measure concentration of NAA, PME, PDE and glutamine.

Objectives: Detecting chemical alterations that could be used as indicators in schizophrenia.

Results: NAA concentration in temporal and frontal cortex of schizophrenic patients, are significantly lower than in healthy controls. In other trials, differences in NAA concentration (measured in prefrontal cortex) have not been found, comparing patients during their first psychotic episode and healthy controls. Lowered concentrations of PME and increased ones of PDE in prefrontal cortex of schizophrenic patients have been found. Glutamine levels are increased in schizophrenic patients, being directly correlated with the duration of the process. These levels are reduced when antipsychotic drugs are used.

Conclusions: The decrease on NAA levels at schizophrenia onset and on healthy relatives remark its value as an endophenotypical indicator, but not as an illness indicator. Changes on PME and PDE concentrations cannot be used as illness indicators. The increase on glutamine synthesis could be due to glutamatergic hypofunction in schizophrenic patients, but there are other factors that may cause it, so it cannot be used as an indicator.