Abstract

Invest Clin. 1996 Jun;37(2):113-28.

Plasma excitatory amino acids in autism.

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METHODS: Plasma amino acid levels were measured by high pressure liquid chromatography (HPLC) in fourteen autistic children, all below 10 years of age. Mean glutamic and aspartic acid valued were elevated (169 +/- 142 uM and 22.1 +/- 13 uM respectively) together with taurine (90.1 +/- 78.7 uM) ($p > 0.1$).

RESULTS: All affected children had low levels of glutamine (241 +/- 166 uM; $p < 0.01$) and asparagine (22.9 +/- 12.9 uM; $p < 0.01$) as compared to normal values (585 +/- 25 and 59.2 +/- 4.2 uM respectively); eleven children had increased aspartic acid and eight children had high levels of glutamate; seven of these children had a concomitant increment of taurine. The increment of the three above mentioned compounds was observed at the same time only in five children.

CONCLUSION: These findings demonstrate that abnormal plasmatic levels of neurotransmitter amino acids may be found in some autistic children. Increased glutamatemia may be dietary in origin or may arise endogenously for several reasons, among others, metabolic derrangements in glutamate metabolism perhaps involving vitamin B6, defects or blockage of the glutamate receptor at the neuronal compartment, or alterations in the function of the neurotransmitters transporters. Increments of taurine, an inhibitor, is likely compensatory and calcium dependent.

PMID: 8718922