Abstract


Blood serotonin and tryptophan in Tourette syndrome.

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Author information

Abstract

Blood serotonin and tryptophan levels were studied in 1,440 individuals. These included patients with Tourette syndrome (TS), attention deficit hyperactivity disorder (ADHA), or ADHD with a family history of TS (ADHD 2 degrees TS); relatives (parents, sibs) of these patients; other patients with TS-like disorders; and controls. There were significant decreases in the serotonin/platelet ratio (P = 0.0001) and in tryptophan (P less than 0.0001) in unmedicated patients with TS. Parents of TS patients showed a comparable, significant decrease in serotonin/platelet ratio (P less than 0.0001) and in tryptophan (P less than 0.0001), and there was no difference between parents with and without symptoms. This suggested that these were trait markers for the Gts gene and agrees with the proposal that TS patients are homozygous for Gts gene and that both parents are Gts gene carriers. Although there was no decrease in the serotonin/platelet ratio in ADHD patients, tryptophan levels were significantly decreased and there was a significant decrease in both the serotonin/platelet ratio and in tryptophan in the parents of patients with ADHD including those without a family history of TS. This is consistent with a close link between TS and ADHD. The basic defect may be a dysregulation of serotonin metabolism. The low blood serotonin and tryptophan levels in TS are consistent with the wide range of behavioral disorders seen in TS and suggest tryptophan oxygenase as a possible candidate gene.

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