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EFFECTS OF A DIMINISHED SEROTONIN SYNTHESIS ON MEMORY AND IMPULSIVE AGGRESSION IN ADULT ADHD

M. Zimmermann¹, M. Grabemann¹, C. Mette¹, M. Kraemer¹, M. Abdel-Hamid¹, F. Zepf², J. Wiltfang¹, B. Kis¹, J. Uekermann¹

¹LVR-Klinikum Essen, Kliniken und Institut der Universitaet Duisburg-Essen, Essen, ²Klinik für Kinder- und Jugendpsychiatrie und -psychotherapie, Universitätsklinikum RWTH Aachen, Aachen, Germany

Introduction: Numerous results from investigations including children with ADHD show associations between a diminished serotonin synthesis and memory impairments as well as higher aggression scores. The aim of the present study was the investigation of the association between a diminished serotonin synthesis, logical memory and impulsive aggression in male adult patients with ADHD.

Method: Twenty male adult patients with ADHD and twenty healthy controls were recruited for this double-blind within subjects crossover study. Subjects completed the Rapid Tryptophan Depletion (RTD) Test or a placebo condition (balanced amino acid load) on either one of two examination days. Clinical variables and general intellectual functioning were assessed. The neuropsychological test battery included the subtest logical memory from the Wechsler Memory Scale (WMS-R), self-assessment of aggression as well as the Point Subtraction Aggression Game (PSAG).

Results: Statistical analysis revealed significant memory impairments of ADHD patients, which were associated with severity of symptoms in early childhood as well as subjective aggression scores. Effects of the tryptophan depletion were not found, neither for the logical memory subtest nor performance in the PSAG.

Conclusions: In contrast to previous studies, these findings suggest that the serotonergic system as reflected by the RTD Test has no effect on memory performance or impulsive aggression. However, these results may be due to possible interactions of other catecholamine systems with the serotonergic system that were not controlled in this study. Therefore an additional study is needed to further explore the catecholamine systems and their effects on memory and impulsive aggression.