

**EFFECTS OF OMEGA-3 DIETARY SUPPLEMENT IN PREVENTION OF POSITIVE, NEGATIVE AND COGNITIVE SYMPTOMS: A STUDY IN ADOLESCENT RATS WITH KETAMINE-INDUCED MODEL OF SCHIZOPHRENIA**

Bruna Schilling Panizzutti, Carolina de Moura Gubert, Laura Stertz, Raffael Massuda, Mirela Paiva Vasconcelos Moreno, Miréia Fortes Vianna Sulzbach, Pedro Domingues Goi, Clarissa Severino Gama

Background: Supplementation of omega-3 fatty acids has shown efficacy to prevent conversion to schizophrenia in ultra-high risk population. In this study we evaluated the efficacy of omega-3 in preventing ketamine-induced effects in an animal model of schizophrenia and its effect on BDNF serum levels. Methods: Forty-eight Wistar male rats were included. Twenty-four received 0.8g/kg omega-3 and 24 tween, both groups at the 30th day of life for 15 days. Each group was split in two 12-animals groups to receive along the following 7 days 25 mg/kg of ketamine or saline intra-peritoneal. The total treatment period was 22 days. Locomotor and exploratory activity (open-field task), memory test (inhibitory avoidance test) and social interaction between pairs (latency time to first contact, number and time of contacts) were evaluated at the 52nd day of life. Bloods for BDNF were withdrawal at the 53rd day of life. Results: Social interactions were decreased in time and number of contacts, and latency time to first contact was increased in ketamine group. Ketamine increased covered distances in 5, 10 and 15 minutes. Ketamine+omega-3 were not different than controls and omega-3 alone in 10 and 15 minutes. On the inhibitory avoidance memory test, omega-3 has prevented ketamine-induced impairment on working, short and late memories. BDNF levels were higher in ketamine+omega-3 group ( $p=0.009$ ). Conclusions: Omega-3, in a ketamine-induced model of schizophrenia, prevents in adolescents Wistar male rats the equivalent in humans of positive, negative and, cognitive symptoms of schizophrenia. Moreover it increases BDNF in prevention treatment of ketamine effects.