A 12-week, Double-blind, Placebo-controlled Trial of Ondansetron Adjunctive Treatment to Risperidone in Chronic and Stable Schizophrenia

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Background: 5-HT3 receptors are prime candidates due to their functional diversity to treat cognition impairments in patients with schizophrenia. The purpose of this study was to assess the efficacy of ondansetron as an adjuvant agent in the treatment of chronic schizophrenia in particular for cognitive impairments.

Methods: This investigation was a 12-week, double blind study of parallel groups of patients with stable chronic schizophrenia. Thirty patients were recruited from inpatient and outpatient departments, age ranging from 22 to 44 years. All participants met DSM-IV-TR diagnostic criteria for schizophrenia. To be eligible, patients were required to have been treated with a stable dose of risperidone as their primary antipsychotic treatment for a minimum period of 8 weeks. The subjects were randomized to receive ondansetron (8 mg/day) or the placebo in addition to risperidone (4-6 mg/day). Clinical psychopathology was assessed with Positive and Negative Syndrome Scale (PANSS). Cognition was measured by a cognitive battery. Patients were assessed by a psychiatrist at baseline and after 8, and 12 weeks after the medication started. The PANSS scores and cognitive performance were used as the outcome measures. The patients provided informed consent in accordance with the procedures outlined by the local IRB, and were informed that they could withdraw from the experiment at any time. The trial was performed in accordance with the Declaration of Helsinki and subsequent revisions. A two-way repeated measures analysis of variance (time-treatment interaction) was used. The two groups as a between-subjects factor (group) and the three measurements during treatment as the within-subjects factor (time) were considered.

Results: The ondansetron group had significantly greater improvement in the negative symptoms, general psychopathological symptoms and PANSS total scores over 12 weeks trial (Greenhouse– Geisser corrected: df= 1 and F=5.14; P=0.03). Administration of ondansetron significantly improved visual memory based on improvement on visual reproduction, visual paired associate and figural memory sub tests of Weschler Memory Scale – Revised.

Conclusion: The present study indicates ondansetron as a potential adjunctive treatment strategy for chronic schizophrenia particularly for negative symptoms and cognitive impairments.