

**Original article**

**Hippocampal-dependent spatial memory and histoarchitectural integrities of the ca regions of wistar rats following administration of rauwolfia vomitoria and chlorpromazine**

Moyosore S. Ajao, Aminu Imam, Musa I. Ajibola, Ibrahim Abdulmumin, Abdulbasit Amin, Misturat Y. Adana, Olawepo Ayokunle, Abdulmajeed W. Imam

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**ABSTRACT**

Psychotic patients demonstrate poor spatial memory, ascribed to impaired hippocampal functions, and bodies of evidences have attributed cognitive impairments to the poor functional outcomes in psychosis management. The efficacy of chlorpromazine and Rauwolfia vomitoria on spatial memory performance and differential histoarchitecture of the hippocampi of adult Wistar rats was examined in this study. Twenty five adult male Wistar rats weighing between 200 - 230 g were randomly grouped to five (Normal, low and high dose chlorpromazine and low and high dose R. vomitoria) of five animals each. 2 ml of normal saline was given to Control animals daily, 5mg/kg of chlorpromazine was given as low dose, 10 mg/kg of chlorpromazine was given as moderate dose, 150 mg/kg of R. vomitoria was given as low dose and 300 mg/kg of R. vomitoria was given as high dose orally. All the medications were given daily for 21 days. A Y-maze apparatus was used to assess the spatial memory performance in the rats at days 14 and 21 of the experiment. All the animals were euthanized using 20 mg/kg of intramuscular ketamine, cardially perfused with 4% paraformaldehyde, the brains and the hippocampus removed for histological analysis. Results from this study show that Rauwolfia at 150 and 300 mg/kg improved the correct decision (right triplet alternation) and reduced wrong decision (wrong triplet alternation) in the treated rats at days 14 and 21 respectively with an unaltered hippocampal histoarchitecture. While chlorpromazine at 5 and 10 mg/kg induced an increased wrong decision (wrong triplet alternation) and reduced correct decision (right triplet alternation) across treatment periods and caused an apparent distortion in the hippocampus. In conclusion, R. vomitoria could be a better alternative agent with more therapeutic potential in the treatment of psychosis and could possibly remediate cognitive impairments in psychosis.

Keywords: Rauwolfia vomitoria, chlorpromazine, psychosis, Hippocampal based spatial memory, Caudate Ammonis

