

P-1288 - NEUROPROTECTIVE AND COGNITIVE ENHANCEMENT EFFECTS OF BACOPA MONNIERI ON NOVEL OBJECT RECOGNITION IN SCHIZOPHRENIC RAT MODEL

P.Piyabhan, T.Wetchateng

Institute of Preclinical Science, Faculty of Medicine, Thammasat University, Patumtani, Thailand

Cognitive impairment is a common characteristic of schizophrenia. *Bacopa monnieri* (Brahmi), a traditional Indian medicine, was shown to improve cognition. This study aimed to investigate cognitive-enhancement and neuroprotective effects of Brahmi in a schizophrenic rat model, induced by sub-chronic phencyclidine (PCP) administration. The novel object recognition (NOR) was used to evaluate the cognitive function.

72 Male Wistar rats, weighting 200-220 g, were divided into four groups: Group-1 received PCP (2 mg/kg, i.p., twice daily, for 7 days); Group-2 received 0.9% NaCl i.p. for 7 days; Group-3 orally received Brahmi extract (40 mg/kg/day, for 14 days) followed by PCP injection for 7 days; Group-4 orally received vehicle for 14 days then 0.9% NaCl injection for 7 days. NOR was compared between Group-1 and Group-2, and between Group-3 and Group-4 using *t*-test. Group-1 rats were then divided into two groups: orally received Brahmi (Group-1A) and vehicle (Group-1B) for 14 days. Mean NOR was compared between the two groups.

Mean NOR of Group-1 is less than Group-2 ($p=0.002$). Mean NOR of Group-3 is significantly higher than Group-4 ($p=0.007$), indicating a neuroprotection from Brahmi. When divided Group-1 rats into two sub-groups, mean NOR of the schizophrenic rats receiving Brahmi (Group-1A) is higher than those receiving vehicle (Group-1B) ($p=0.02$).

Conclusively, cognitive deficit occurs in the PCP-administered rats; however, it could be recovery after Brahmi administration. Moreover, Brahmi was shown to prevent the cognitive deficit. Overall, our data indicate that Brahmi has both neuroprotective and cognitive enhancement effects in schizophrenic rat model.