Can Intraperitoneal $GABA_B$ receptor antagonist (CGP 55845) injections affect the behaviour of Adult Male Albino Mice?

Abstract

Present study was conducted to report the effect of $GABA_B$ receptor antagonist, CGP 55845 {3-N [1-(S)-(3,4-dichlorophenyl)ethyl]amino-2-(S)-hydroxypropyl-P-benzyl-phosphinic acid} on the selective aspects of male albino mice behaviour by the application of serious of neurological (Rota rod, Open field, Morris Water Maze, Light and dark transition, Elevated plus maze and Novel object) tests. Mice were either intrapertoneally injected with 1mg CGP 5584/ Kg body weight/ ml of DMSO (Dimethyl Sulfoxide) or with equal volume of saline solution (0.9 % NaCl) for twelve days, thirty minutes before the start of experimental procedure.

Data analysis for various parameters for rota rod, open field, light and dark transition test, elevated plus maze and novel object test revealed that the neuromuscular coordination, locomotory and exploratory behaviour of male albino mice was not significantly affected by the CGP 55845 injections. The results for Morris water maze (MWM) indicated that all the studied parameters of acquisition phase remained statistically unaffected in male albino mice treated with CGP 55845 except for the parameter time mobile ($P = 0.03$) during training day 1 and time immobile ($P = 0.004$) during the training day 3. Results for probe trial 1 indicated improved spatial memory while all parameters remained unaffected during probe trial 2 indicating that CGP 55845 was unable to improve long term memory in male albino mice. We recommend further studies with higher dose concentration of CGP 55845 to explore its effect on albino male mice behaviour.

Key words. CGP 55845; GABAb receptor antagonist; behaviour; Morris water maze