ABSENCE OF SKILLED MOTOR LEARNING IN THE RAT MODEL OF PARKINSON’S DISEASE (PD) AFTER 20 WEEKS OF LESION

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Introduction: Previous studies have shown that intracerebellar injection of 6-hydroxydopamine (6-OHDA) initiate degeneration of the exposed dopaminergic neurons within 3-4 days and cause maximum damage by three weeks. The effect of lesion in motor skill learning at week 20 has not been elucidated.

Aim: To determine motor skilled learning in PD model at week 20 post lesion.

Methodology: Wistar (Male) rats (n=5) were anaesthetized with sodium pentobarbital (50mg/kg) i.p., pretreated with desipramine (20mg/kg) i.p., and placed in a stereotaxic frame. 6-OHDA (10µg) in 4µl of ascorbic acid saline (0.02%) was injected into the substantia nigra pars compacta (SNc) \{coordinates: AP=-5.3mm, L= 2.5mm, DV=7.7mm \(\) \(\)\(\) \(\)Paxinos\}\). The test was done 20 weeks after surgery for 5 consecutive days. Control rats (n=4) did not received any surgical injections. Animal was placed on the rotating rod (10 rpm) and fall time was recorded \(\) \(\) \(\) \(\) (cut off time= 300s) 3 times per day for 5 consecutive days. Mean of stay duration of both the groups was analyzed.

Result: Lesioned rats stayed on rotae for less than 50s whereas the control animals for more than 180s.

Conclusion: No motor skill learning was observed in lesioned rats even after repeated training sessions indicates disrupted motor coordination even after 20 weeks of 6-OHDA injection.