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Role of Clitoria ternatea root aqueous extract supplementation to rat pups in attenuating maternal separation stress induced deficits in spatial memory

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Background: Perinatal maternal separation is a stress during growth spurt period; it has proved to cause behavioral alterations in animals. Several herbal medicines are known to influence brain development. Earlier studies show that *Clitoria ternatea*, an herb used in Ayurveda enhances neural plasticity and increases acetylcholine in rat hippocampus. But, there are no studies elucidating the role *Clitoria ternatea* aqueous root extract [CTR] supplementation in attenuating perinatal maternal separation stress (PMSS) induced spatial memory deficits.

Objective: To study the role of CTR supplementation in attenuating PMSS stress induced spatial memory deficits.

Materials & Methods: In this study, rats were divided into four groups: Inbred Wistar rat pups, control, PMSS and PMSS+CTR [n=6 pups/group]. PMSS was induced during post- natal day (PND) 2-21 for 6 hours/day to all groups except control group. CTR was supplemented to the appropriate group from PND2-21. On 22nd day all groups of rats were subjected to spatial learning and memory test, using radial arm maze.

Results: Increase in latency to enter baited arms of the maze was observed in PMSS group compared to control and CTR groups. CTR group has showed significantly increase in number of correct entries was observed in short term ($p<0.01$) and long term studies ($p<0.001$), similarly significant decrease in working memory errors and reference memory errors in short term ($p<0.001$ and $p<0.005$), and long term studies ($p<0.01$ and $p<0.001$) were observed when compared to that of PMSS group.

Conclusion: Results of the present study in rats, supports the use of CTR to alleviate early life stress- induced deficits in spatial memory errors.

Biography

Prathibha M D Almei has completed her BAMS in year 2002 from Rajiv Gandhi University of Health Sciences in Karnataka-India and has done her MSc in Medical Physiology from Manipal University in year 2009. Currently, she is pursuing PhD under Manipal University- India. Her area of research is Neuroscience. She is working as a Senior Grade Lecturer in Department of Physiology, Manipal University, India.

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