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Evaluation of anxiolytic activity of vitamin D – an experimental study

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Background: There is a scarcity of animal studies regarding anxiolytic activity of vitamin D while there are some contradictory reports regarding anxiolytic activity of vitamin D in humans. Hence present study was planned with objectives to investigate: anxiolytic effect of vitamin D after single dose and after multiple doses as well as its interaction with a standard anxiolytic drug in animals.

Methods: Elevated plus maze and light-dark arena tests were used to evaluate anxiolytic activity of vitamin D in adult male Swiss albino mice. Vitamin D was administered in single and in multiple doses (n=6 in each group). In interaction studies, half the therapeutic equivalent dose of vitamin D was combined with sub-effective dose of alprazolam, a standard anxiolytic drug. Control group received 0.5 ml of 1% gum acacia. Locomotor activity of all the drugs used was tested by using open field test with the help of actophotometer. Data was expressed as Mean±SD and analyzed by using standard statistical tests. P<0.05 was considered to be statistically significant. Study was approved by the Institutional Animal Ethics Committee.

Results: In elevated plus maze test, administration of single dose of Vitamin D did not show any significant anxiolytic activity while multiple dose administration showed significant increase in number of entries into the open arms indicating some anxiolytic activity. There was no significant anxiolytic activity recorded in light-dark arena experiment. In interaction studies, combined treatment failed to show any significant anxiolytic activity. Results of open field test ruled out any influence of the drugs on locomotor system.

Conclusion: In the present study, administration of Vitamin D in multiple doses indicates some anxiolytic activity. Further studies are needed to confirm and elaborate the role of vitamin D in behavioural disorders like in anxiety.

Biography

Suneel I Majagi is presently working as Professor and Head of Department of Pharmacology and as Vice Principal of Gadag Institute of Medical Sciences, Gadag, Karnataka, India. He has conducted various research projects as principal investigator/co-investigator and published 38 articles in reputed journals and has also authored a book. He has guided many postgraduate students. He is member of many professional bodies and has organised many faculty development programmes as Organising Chairman/Secretary. He has presented scientific papers in various conferences and is an Editor/Reviewer for many reputed journals. He has many awards and recognitions in to his credit. He is member of Board of Studies and Pharmacovigilance Committee.

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