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# INTRANASAL DELIVERY OF SOLID-LIPID NANOPARTICLES OF PITAVASTATIN FOR ASSESMENT OF ANTIEPILEPTIC PROPERTIES IN MICE

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## ABSTRACT

In current scenario epilepsy is becoming a global concern and involving people of all ages, simultaneously newer antiepileptic drugs (AEDs) are developed but these AEDs are associated with some serious adverse effects, so black box warning are issued by FDA, hence there is need to look for alternate or adjuvant medication. Pitavastatin (HMG CoA reducates inhibitors) are known anti-hyperlipidemic agent but they also exert some pleiotropic effects, hence first time anti-epileptic properties (pleiotropic effect) of solid-lipid nanoparticle (SLNs) of pitavastatin in epilepsy are evaluated via intranasal route. SLNs and intra-nasal route are employed because dose related myopathy exerted by statins are major limitations. Swiss albino mice were given 0.25 mg/kg of SLNs of pitavastatin for 7 days (for acute study) and similar dose of test drug and 25 mg/kg of pentylenetetrazole (PTZ) (on alternate day, for 12weeks) were given for chronic studies. In acute studies effect of drug on PTZ- induced seizure, transfer latency and step-down latency for cognition were performed, where as in chronic study estimation of neuronal reduced glutathione (GSH), an endogenous antioxidant and thiobarbituric acid reacting species (TBARS) were done. The result showed protective effects on PTZ-induced seizure; however, no significant effect on cognition was observed. In chronic study drug showed significant elevation of GSH and reduction of TBARS i.e. inhibition of lipid peroxidation,

when compared to negative group receiving subconvulsant dose of PTZ, Thus we conclude that SLNs of pitavastatin posses anticonvulsant property by virtue of its blocking PTZ-induced seizure and inhibiting lipid peroxidation.

**KEYWORDS:** Epilepsy, SLNs of pitavastatin, pentylenetetrazole, lipid peroxidation.