

Protective effect of Atorvastatin on D-galactose induced aging Model in Mice

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Atorvastatin (Ator), competitive inhibitors of 3-hydroxymethyl-3-glutaryl-coenzyme-A reductase, is a cholesterol lowering drug. Ator has been shown to have neuroprotective, antioxidant and anti-inflammatory properties making that a potential candidate for the treatment of central nervous system (CNS) disorders. Here we assessed the effect of Ator on the D-galactose (D-gal)-induced aging in mice. For this purpose, Ator (0.1 and 1 mg/kg/p.o.), was administered daily in D-gal-received (500 mg/kg/p.o.) mice model of aging for six weeks. Anxiety-like behaviors and cognitive functions were evaluated by the elevated plus-maze and novel object recognition tasks, respectively. Physical power was assessed by forced swimming capacity test. Animals brains were analyzed for the superoxide dismutase (SOD) and brain-derived neurotrophic factor (BDNF). We found that Ator decreases the anxiety-like behaviors in D-gal-treated mice. Also, our behavioral tests showed that Ator reverses the D-gal induced learning and memory impairment. Furthermore, we found that Ator increases the physical power of D-gal-treated mice. Our results indicated that the neuroprotective effect of Ator on D-gal induced neurotoxicity is mediated, at least in part, by an increase in the SOD and BDNF levels. The results of present study suggest that Atro could be used as a novel therapeutic strategy for the treatment of age-related conditions.

Biography

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