

Preventive and Attenuative Effect of Vitamin E on Selenite-induced Cataract in Rat

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Abstract : Cataract is the most common cause of blindness worldwide and its incidence will increase as the World's population ages. Even in modern ophthalmology, there is no effective medical treatment for cataract except surgery. Development of a drug which could prevent or delay the onset of cataract will lessen this burden and reduce the number of blind patients waiting for cataract surgery. This study was undertaken to evaluate the protective effect of vitamin E on Selenite-induced Cataract in Sprague-dawely rats. Cataracts were induced in rats by administration of sodium selenite. On postpartum day ten, in group I, saline was injected subcutaneously. Group II rat pups received subcutaneous injection of vitamin E (60mg/kg B.W.) at day 8 postpartum and every other day thereafter. Group III and IV rat pups received a subcutaneous injection of sodium selenite (13mg/kg B.W.) at day 10 postpartum. Group IV also received subcutaneous injection of vitamin E (60mg/kg B.W.) at day 8 postpartum and every other day thereafter. The development of cataract in rats was assessed clinically by slit-lamp biomicroscope from day 14 up to postpartum day 28. After sacrifice, extricated pup lenses were analyzed for total and soluble protein concentrations and eletrophoretic pattern (SDS-PAGE). There was no opacification of lens in Group I and II. There was mature cataract in 95% of Group III. In group IV, 55% of rats developed sub capsular or cortical cataract. Cataractous and biochemical changes of the crystalline lens proteins due to selenite can be retard or prevented by vitamin E.

Keywords : preventive effect, selenite-induced cataract, vitamin E, rat

Conference Title : ICABBBE 2015 : International Conference on Agricultural, Biotechnology, Biological and Biosystems Engineering

Conference Location : Vienna, Austria

Conference Dates : June 21-22, 2015