Effect of Green tea on age-related histological changes in the retina of rat

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Abstract:

Background: Age-related changes in the retina are often accompanied by visual impairment. Oxidative injury and inflammation are intimately involved in the aging process and the development of age-related diseases. Green tea has been shown to have antioxidant and anti-inflammatory effects on various types of cells. It contains a series of polyphenols called catechins and has been applicable for disease prevention and treatment. Aim of the study: to investigate the effects of green tea intake on age related changes in retina. Material & Methods: 30 female albino rats were divided into three equal groups: group I (control adult): 6 months old, group II (aged): 18 months old, group III (green tea treated): 12 months old rats received green tea daily at a dose of 300 mg/kg body weight in 1.5 ml distilled water orally by a gastric tube for 6 months. Retinal specimens from all groups were processed for light and electron microscopical examination. Statistical analysis was carried out to measure the retinal thickness in the three studied groups. Results: There were a degenerative changes in some layers of the retina. The ganglion cells appeared more vulnerable to age-related loss than other retinal cells. A significant reduction in the retinal thickness was observed with ageing. Also, there was a significant increase in astrocytes number. After treatment with green tea, a recovery of both structural changes and retinal thickness was observed. Conclusion: Aging induced marked changes in the retina. These changes were mostly normalized after intake of green tea.