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EFFECT OF CURCUMIN ON THE AORTA OF EXPERIMENTAL OVARIECTOMIZED RATS FED WITH 2% CHOLESTEROL DIET: AN ELECTRON MICROSCOPIC STUDY

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Background:

Curcumin is the active compound of *Curcuma longa* (turmeric). Curcumin has been reported to possess antitumor, antifungal, anti-inflammatory, antioxidant, antispasmodic and hypocholesterolemic effects. The main aim of the present study was to observe the effect of curcumin on the aorta of ovariectomized rats fed with 2% cholesterol diet.

Materials and methods:

Twenty four female Sprague-Dawley rats (200-250g) were taken for the study. The rats were acclimatized for one week and divided equally into four groups. The first two groups were sham control groups, while the later two groups were ovariectomized group. Group I (SHM-VL) was fed with 2% cholesterol diet+vehicle; group II (SHM-CC) with 2% cholesterol diet+curcumin; group III (OVX-VL) with 2% cholesterol diet+vehicle and group IV (OVX-CC) was fed with 2% cholesterol diet+curcumin. The curcumin was administered orally in the dose of 50mg/ml/kg body weight. The treatment was performed after two weeks following ovariectomy. Commercially available Vitamin E free RBD Olein was used as vehicle. Following four months of treatment, the rats were sacrificed and the proximal aorta was taken for histological studies.

Results:

There was no change in the ration of the tunica intima: tunica media in all the groups. Electron microscopy showed that tunica intima layer was filled with high number of collagen fibers and subendothelial cells, showed internal elastic lamina damage and migration of smooth muscle cells from tunica media to the tunica intima in the OVX-VL and OVX-CC groups compared to the SHM-VL and SHM-CC groups. However, no prominent ultra structure changes were seen in the SHM-CC and OVX-CC groups compared to the SHM-VL and OVX-VL groups.

Conclusion:

Orally administration of curcumin in dose of 50mg/ml/kg body weight did not show any changes in the aorta of the ovariectomized rats.

Key word:

Curcumin, Ovariectomy, Aorta, Atherosclerosis, Rats