OR-1

Effects of Andrographolide on Atherosclerosis Induced by Porphyromonas Gingivalis- an Experimental Study in Rat

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Associations between atherosclerosis and *Porphyromonas gingivalis*, a major periodontopathogen, have been indicated. The aim of the present study was to examine the histological and antioxidant effects of *Andrographolide* on induced atherosclerosis by *Porphyromonas gingivalis***.** Atherogenesis was examined in male Sprague Dawley (SD) rat, which were divided into five groups six rats for each. Normal control (A) and experimental groups (B, C, D and E) were challenged orally with *P. gingivalis* ATCC 33277 (0.2 mL of 1.5 X 10^{x12} bacterial cells/mL in 2% CMC with PBS) five times a week for one month. Group (C) received orally treatment with simvastatin 100 mg/kg, while groups (D and E) received orally treatment with *Andrographolide* 20 mg/kg and 10 mg/kg respectively for one month. Animals scarified and sections of the aortic, heart, liver and kidney were made at a thickness of 5µl stained with (H & E), and assessed for histopathological changes. Homogenate prepared from the heart and aortic to evaluate the enzymatic activity of SOD and GSH. Histological examination (H&E) of group (B) aorta sections showed a miner thickening in intimal of the aorta, while treated groups with *Andrographolide* (D and E) showed no changes in intimal of the aorta. On other hand, histological evaluation of liver, kidney and heart tissues showed no damage or abnormality among groups. *Andrographolide* significantly improved the enzymatic activity of SOD and GSH in heart and aortic tissue homogenate of group (D and E) and that could be due to the anti-oxidants properties of *Andrographolide.* Conclusion: Based on these results we can say that *Andrographolide* could be a good herbal agent in the treatment of atherosclerosis.

Keywords: Atherosclerosis, Porphyromonas gingivalis, Andrographolide, antioxidant, histology.