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The biological effect of High Meat Diet with or without Ascorbic Acid Supplementation on Adult Male Rats.

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Abstract:

Oxidative stress is associated with chronic degenerative disease, such as cardiovascular diseases (CVDs), and several studies have shown that diet and some of its components could influence the intensity of oxidative stress damage, strong positive correlations between the amount of animal protein in the diet and CVDs have been reported, suggesting that amount and type of protein may be important in disease etiology. The aims of the present study were to investigate the effects of high meat diet with or without supplementation of Ascorbic Acid on some lipid biochemical parameters, blood glutathione (GSH) and serum uric acid of adult male rats. Adult male albino rats (١٨) were divided into ٣ groups: Control fed on basic diet, High Meat diet (HM) fed on diet containing (١٣%) protein from minced beef meat and high meat diet supplemented with Ascorbic Acid (HM+AA) containing (١٣%) protein from minced beef meat and (٣٠٠ mg) Ascorbic Acid. Results showed that, in comparison with the control group, the HM diet resulted in a significant increments in serum triglycerides ($P \leq ٠.٠٥$), total cholesterol ($P \leq ٠.٠١$), Low Density Lipoprotein ($P \leq ٠.٠١$) and serum Uric acid levels ($P \leq ٠.٠١$), meanwhile there were a significant reduction in serum HDL and blood GSH levels ($P \leq ٠.٠٥$). Whereas, rats group fed on (HM+AA) showed a highly significant increment ($P \leq ٠.٠١$) in serum (HDL) and (GSH) levels when compared with the high meat diet, with a significant ($P \leq ٠.٠١$) reduction in serum triglycerides, total cholesterol and (LDL) levels. The study concluded that the consumption of (HM) diet resulted in increasing the intake of many nutrients involved in increasing of the oxidative stress and these effects could be partially prevented by supplementing of HM diet with Ascorbic acid. However, it is recommended that meat intakes should be reduced to moderate amount (١g/Kg body weight) in form of lean red meat with an increase in vitamin C rich foods consumption.

Key Word: High Meat diet, Ascorbic acid, Lipid Profile, Blood Glutathione, Uric Acid, Albino Rats.