

# Investigation of LDL Oxidation and Tendency to Thrombosis in Hyperlipidemic Rats With Experimental Hyper-and Hypothyroidism

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**Objective:** In this study, effects of hyperlipidemia and thyroid dysfunction on development of thrombus plaques and oxidation was investigated.

**Methods:** 60 Wistar Albino rats were divided in 6 groups equally. 1. Control group, 2. Hypothyroid group, 3. Hyperthyroid group, 4. Hyperlipidemia group, 5. Hyperlipidemic hypothyroid group, 6. Hyperlipidemic hyperthyroid group. Methimazole was added to diet of hypothyroid group, L-thyroxine was added to the diet of hyperthyroid group, cholesterol, cholic acid and sunflower oil were added to diet of hyperlipidemia group for 3 months in order to obtain experimental hypothyroid, hyperthyroid and hyperlipidemia groups. At the end of the study, all animals were sacrificed. The blood and tissue samples were taken from animals, T3, T4, TSH, triglycerides, cholesterol, HDL, LDL, ox-LDL, TF, total protein, LPO, GSH, sialic acid levels, SOD and TF activity were determined.

**Results:** Blood ox-LDL levels were markedly increased in all experimental groups in comparison to the control group. TF levels did not change in hyperlipidemic hyperthyroid group, on contrary it was increased in all the other groups. TF activity in the brain, liver and kidney tissues had varying results for each group. Lipid peroxidation was generally increased in brain, liver and kidney tissues according to groups, while GSH levels and SOD activity had varying results depending on tissue and group differences.

**Conclusions:** In conclusion, the findings of this study will contribute to the literature on both thyroid dysfunction and lipid oxidation and tendency to thrombosis.

**Key words:** Hypothyroidism, hyperthyroidism, hyperlipidemia, oxidative stress, trombosis