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Research Highlight

ROLE OF HYPOTHYROIDISM IN LIPID PEROXIDATION

Sehrish Naz
Department of Chemistry,
University of Agriculture, Faisalabad, 38000, Pakistan

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Thyroid hormones play a significant role in the control of human metabolism. The aim of thyroid hormones is to speed up the basal metabolic rate and the enegy metabolism of tissues in many mammalian species[1].

Hypothyrodism, also known as underactive thyroid, is a condition in which thyroid gland is unable to produce enough of certain hormones such as T3 and T4. Reduction in the production of thyroid activity often leads to fatigue, weight gain, depression, muscle weakness, elevated blood cholesterol level and cold intolerance[2]. Moreover, suboptimal thyroid function has also been connected with apmlified frequency of heart failure and coronary heart disease[3].

Free radicals are regarded as highly reactive molecules that can lead towards lipid peroxidation and can damage the macromolecules, endothelium and erythrocytes as well as cellular structure of the organism. Oxygen free radicals possess significant effects on the pathogenesis of tissue damage of numerous pathologic conditions[4]. According to earlier clinical and experimental investigations, in hypothyroidism level of free radical gets altered.

These facts urged scientists for conducting a new research in order to evaluate the possibility of modification in lipid peroxidation due to hypothyroidism. For this purpose, scientists selected 28 subjects having hypothyroidism as well as thirty three subjects with euthyroid. Afterwards, scientists collected the blood samples and then measured serum malondialdehyde, T3, T4 as well as TSH[5].

The results showed that hypothyroidism may not modulate the free-radical-induced oxidative damage and that hypothyroidism may not provide some protection against lipid peroxidation.

During this study, it was concluded that the enhanced lipid peroxidation can play a role in the free-radical-induced oxidative damage of some tissues in hypothyroidism. This phenomenon points towards a significant relation between hypothyroidism as well as lipid peroxidation. Conclusively; hypothyroidism is linked with amplified susceptibility to lipid peroxidation as compared to that in the euthyroid state.

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