

## HUMAN GENETICS &amp; GENETIC DISEASES

## MOLECULAR MEDICINE &amp; DIAGNOSTICS

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**DNA damage in patients with hypothyroidism****Komal and Gursatej Gandhi**

Guru Nanak Dev University, India

Hypothyroidism, a common endocrine disorder is defined as any benign or malignant condition which affects the structure or function of the thyroid gland and has a multifactorial etiology. Thyroid hormones are involved in the regulation of basal metabolic state and in oxidative metabolism but their imbalance leads to increased generation of reactive oxygen species. ROS have a high reactivity potential, therefore they are toxic and can lead to oxidative damage in cellular macromolecules such as proteins, lipids and DNA. Studies on assessment of genetic damage in hypothyroid patients of this region have not come to attention. Therefore, in the present study, DNA damage was investigated in peripheral blood leukocytes of patients with hypothyroidism (n=50, 20-45 years) using alkaline single cell gel electrophoresis (SCGE) assay. Adult healthy participants (n=30) matched for age and sex formed the control group. The study was approved by the Institutional Ethics Committee and written voluntary informed consent was given by all participants. The results revealed a significant increase in damage index ( $p=0.001$ ), damage frequency ( $p=0.004$ ) and percent DNA in tail ( $p=0.006$ ) in patients compared to controls. This study results imply that patients with hypothyroidism have cellular DNA damage which may be an effect of the disease and/or the drug therapy. More studies on a larger group (and/or without treatment) may be further informational to assist in disease prognosis.

**Biography**

Komal is working on DNA damage in patients with hypothyroidisms as Project Fellow under the supervision of Dr. Gursatej Gandhi, which is a part of her MSc dissertation thesis.

komalgnu@gmail.com

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