

## **Essential Hypertension, DNA Damage and Dyslipidemia in Two Ethnic Groups**

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**ABSTRACT** To study assessed DNA damage and lipid profile of essential hypertensive patients and healthy control individuals (n=72) belonging to the *Baniya* and *Jat* Sikh ethnic groups. There were 44 patients (30 *Baniya* and 14 *Jat* Sikh) on single drug treatment (atenolol) for essential hypertension and 28 healthy normotensive individuals matched for age, sex, ethnicity and socioeconomic status. Following approval by the Institutional Ethics Committee and after informed consent, demographic information and physiometric and anthropometric measurements were taken from each participant. Leukocytic DNA damage was assessed using the Single Cell Gel Electrophoresis assay and serum lipid levels were determined using an automated analyzer. Significantly elevated ( $p=0.000$ ) DNA damage [DNA migration length- $36.71\pm0.97\mu\text{m}$ ; damage frequency- $97.89\pm0.64$ ; Damage Index (DI)- $266\pm4.04$ ] as well as dyslipidemia were observed in the patients with non-significant gender and ethnic group differences. DNA damage (DNA migration length, DI) was also positively correlated with dyslipidemia (triglycerides- $p=0.440$ , total cholesterol- $p=0.621$ , low density lipoproteins- $p=0.598$ ) in both patient sub-groups. The disease-medicine-lifestyle-BMI interplay could be causing the observed increased genetic damage, which along with dyslipidemia, raises the risk for various cardiovascular diseases and malignancy in the studied patient group.