

## Increased Chromosomal Aberrations in Peripheral Blood Lymphocytes of Traffic Policemen of Amritsar City

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**ABSTRACT** Chromosomal aberrations were investigated in cultured Lymphocytes of 21 traffic policemen occupationally exposed to automobile exhaust and 13 residents of Amritsar city not occupationally exposed to automobile exhaust to assess the genotoxic effects of increasing air pollution of Amritsar city, Punjab (India). The mean percentage frequency of total aberrant metaphases ( $31.12 \pm 10.12$ ), metaphases with numerical aberrations ( $4.39 \pm 2.62$ ), structural aberrations including gaps ( $2.38 \pm 1.91$ ), structural aberrations excluding gaps ( $2.24 \pm 1.68$ ) and acrocentric associations ( $24.40 \pm 7.36$ ), was significantly higher in traffic policemen as compared to controls ( $13.02 \pm 1.97$ ,  $2.39 \pm 0.80$ ,  $1.30 \pm 0.96$ ,  $1.12 \pm 0.68$ ,  $9.41 \pm 2.23$ , respectively). The mean percentage frequency of total aberrant metaphases ( $40.03 \pm 7.84$ ), metaphases with numerical aberrations ( $5.65 \pm 2.58$ ), structural aberrations including gaps ( $3.62 \pm 1.71$ ), structural aberrations excluding gaps ( $3.34 \pm 1.34$ ), and acrocentric associations ( $30.76 \pm 6.09$ ) was also significantly higher in traffic policemen working more than 10 years as compared to traffic policemen working less than 10 years ( $24.52 \pm 5.72$ ,  $3.44 \pm 2.49$ ,  $1.45 \pm 1.47$ ,  $1.42 \pm 1.27$  and  $19.63 \pm 3.72$ , respectively). The result indicates increased chromosomal aberrations and acrocentric associations due to occupational exposure to polluted air having increased concentration of automobile exhausts, and these effects increased with increasing duration of exposure.