Petrol pump attendants during their whole shift period exposed with petrol fume containing benzene, a well known leukemogen. Therefore, assessment of cytogenetic changes in petrol pump attendants due to low dose benzene exposure, was carried out with special emphasis on chromosomal aberrations, sister chromatid exchange (SCE) and micronuclei (MN) as biomarkers. In addition to cytogenetic endpoints, hematological parameters and benzene urinary biomarkers; phenol and t,t - muconic acid were also measured to ensure that whether or not petrol pump attendants are exposed to benzene.

The following conclusions are derived from the present study.

- There were no significant increases in chromosome aberrations as well as SCE frequencies in petrol pump attendants in comparison to controls.
- MMC treated smoker petrol pump workers have shown significantly increased chromosomal aberrations as compared to *in vitro* MMC treated smoker controls.
- Lymphocytes of petrol pump attendants were showed significant increase in Micronuclei frequency than control individuals. MMC treated groups of petrol pump attendants also revealed increased
with MN frequency as compared to in vitro MMC treated control groups, indicating the possibility of synergistic and/or co-
mutagenic effects of MMC treatment.

- A significant increase in level of urinary phenol and t,t-muconic acid in petrol pump attendants confirmed benzene exposure at occupational site. On the other hand, hematological parameters did not vary in smoker and non smoker petrol pump attendants.

On the basis of the above findings it is concluded that petrol pump attendants were exposed to low exposure of benzene during their working period. Petrol pump attendants with smoking habits have additional benzene exposure, for long period of time, which might lead to an occupational exposure. Further studies with large number of samples of petrol pump attendants will require with advanced techniques viz. comet assay, FISH etc. for meaningful conclusion. Overall yet there is a dilemma to consider low benzene exposure as a carcinogen and/or leukemogen.