

## **EVALUATION OF MUTAGENIC EFFECT OF OMEPRAZOLE AND PROTECTIVE EFFECT OF VITAMIN E IN MICE**

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Omeprazole – a gastric proton pump inhibitor used in the treatment of peptic ulcer was tested for mutagenicity in germ cells of mice by sperm-head abnormality assay which is one of the simple methods for the detection of mutagenicity caused by various chemicals. Vitamin E (Tocopherol) which curbs generation of peroxidation products was tested for its protective effect against the mutagenicity caused by omeprazole.

One group of mice were taken and given omeprazole orally in the doses of 25, 50 and 75 mg/mouse which corresponds to  $\frac{1}{4}$ ,  $\frac{1}{2}$ ,  $\frac{3}{4}$  LD<sub>50</sub> dose value in mice respectively. Second group of mice were given vitamin E in addition to the same doses of omeprazole. First and second groups of mice were given the drug for a period of five days consecutively and for the second group, in addition to the drug, vitamin E was given for thirty five days. The third control group of animals was fed with distilled water. Mice were sacrificed at the thirty fifth day to collect the sperm samples according to method of Bruce *et al.* in order to see the effect of the drug in the germ cells of mice. The results indicate that the drug is capable of inducing mutations in germ cells of mice and vitamin E has protective role.

### **INTRODUCTION**

Man is being exposed to a large number of chemicals which are released into the human environment. Exposure of individuals to such potentially hazardous substances can result in genetic disease and anomalies causing decline in the health of the population and deterioration of genetic heritability (Ray,1985). These chemicals include agricultural chemicals, industrial chemicals, food additives, cosmetics and drugs in particular. Drugs on one hand have utility with curative properties and on the other hand may pose some hazard to the human health directly or indirectly. Mutational changes can occur both in somatic and germ cells. Mutation in somatic cells results in cancer and ageing while in germ cells will cause hereditary diseases.

Peptic ulcer or acid peptic disease is one of the common gastrointestinal disorders having natural history of spontaneous relapse and remission lasting for decades if not for life. The incidence is high and more prevalent in developing countries. It has been reported that

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