SUMMARY AND CONCLUSION

Rheumatism is one of the oldest group of diseases known to man, millions of the human population suffer now adays from this disease. This puts a great burden on the economics of the world.

Anti-inflammatory drugs are usually prescribed for rheumatic diseases**.** Non-steroidal anti-Inflammatory drugs (NSAIDs) are widely used by physicians in treating rheumatism.

The aim of this study is to investigate the effect of different doses of a NSAID (Lornoxicam) for a different period of time (12hrs, 24hrs, 48hrs, and 5 days) to study its effect on the chromosomes and sperm head abonormality using classical methods of cytogenetics.

In this study 130 mice (70 male and 70 female), *Mus musculus*, varying from 30-50gm in weight and aged from 8-12 weeks old were used, these mice were obtained from the National Research Center (N.R.C) in Dukki.

The female mice and also the male mice were divided into four groups each. Each group consisted of 20 mice except the control group which consists of 10 mice.

Group(1)

10 mice (5 females and 5 males)were served as control for lornoxicam effect .

Group(2) :

40 mice (20 females and 20 males) were injected interperitoneally with daily dose of 1/20LD50 of lornoxicam at different periods of time; 12hrs (One injection), 24hrs (two injections), 48hrs (three injections) and 5 days (five injections).

Group(3) :

40 mice (20 females and 20 males) were interperitoneal injected with adaily dose of 1/10LD50 of lornoxicam at different periods of time ; 12hrs, (one injection), 24hrs (two i.p. injections), 48hrs (three injections) and 5 days (five injections).

Group(4) :

40 mice (20 females and 20males) were interperitoneal injected with adaily dose of 1/5LD50 of lornoxicam at different periods of time; 12hrs (one injection), 24hrs (two injections), 48hrs (three injections) and 5 days (five injections).

Various chromosomal aberrations and sperm head abnormalities were observed, quantitated, and statistically analyzed.

Structural aberrations:

The highest percentage of chromosomal abnormalities observed in bone marrow cells of male and female mice was found clearly in the form of deletion, centric fusion, chromatid gaps and centromeric attenuation while the chromatid fragment and the end to end association were the lowest value of aberrations appeared.

The cells with more than one type of aberrations in female and male mice are clearly with high significant difference between the control and all the treated animals with all doses except of 1/20 LD50 at 5 days and of 1/10 LD50 at 24hrs and 48hrs and 5 days.

Numerical aberrations:

Represented by the monosomic cells, the highest significant difference with the dose of 1/10LD50 at 5 days and a significant difference with the doses of 1/20LD50 at 5 days and 1/10LD50 at 48hrs in both male and female mice.

The rate of mitotic index increased in male and female mice in dose 1/5LD50 at 12 hrs.

SPERMS:

The incidence of sperm head abnormality was increased in the treated animals than control and this increase was dose and time dependent.

Conclusion:

Patients have to be alarmed of the possible mutagenic effect of this none-steroidal anti-inflammatory drug.