SUMMARY & CONCLUSION

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The present study was conducted on 80 male rats to probe the effect of vitamins A and C, solely and in combination, on the recovery of artificially-toxified liver and on bone marrow cells.

Animals were divided into five groups as follows:-

Group I (control group)

Formed of 10 rats. Each animal was given only 0.5 ml of distilled water every day by an oral tube.

Group II (positive control group)

Formed of 10 rats. Each animal was given a weekly oral dose of CCl_4 after 2 weeks from the start of the experiment for 8 weeks.

Group III (Vitamin A experimental group)

Formed of 20 rats and divided into two subgroups each containing 10 rats:

- ***Subgroup (a)***: Each animal was given daily oral dose of vitamin A for 2 weeks then CCl_4 for 8 weeks.
- ***Subgroup (b)***: Each animal was given daily oral dose of vitamin A for 10 weeks while CCl_4 was given for 8 weeks

starting 2 weeks after the initial dose of vitamin A.

Group IV (Vitamin C experimental group)

Formed of 20 rats and divided into two subgroups each containing 10 rats:

- ***Subgroup (a)***: Each animal was given daily oral dose of vitamin C for 2 weeks then CCl_4 for 8 weeks.
- ***Subgroup (b)***: Each animal was given daily oral dose of vitamin C for 12 weeks while CCl_4 was given for 8 weeks starting 2 weeks after the initial dose of vitamin C.

Group V (Vitamin A&C experimental group)

Formed of 20 rats and divided into two subgroups each containing 10 rats:

- ***Subgroup (a)***: Each animal was given daily oral dose of vitamin A and C for 2 weeks then CCl_4 for 8 weeks.
- ***Subgroup (b)***: Each animal was given daily oral dose of vitamin A and C for 12 weeks while CCl_4 was given for 8 weeks starting 2 weeks after the initial doses of vitamins.

* Liver and bone marrow samples were taken 2,4,6,8 and 10 weeks after the initial dose of CCl_4 (the last sample was considered as a withdrawal sample taken 2 weeks after stoppage of CCl_4).
* From the liver samples, histological sections were prepared

for light and EM study and from the bone marrow samples, chromosomal assay and transformed cell study were performed.

The results of the present study revealed the following:

1- Vitamin C had an evident role in preventing the signs of toxicity on hepatocytes and hepatic lobules while vitamin A had a drastic effect on such toxicity to the level that it inhibited the antioxidant role of vitamin C when combined.

2- Neither vitamin A nor vitamin C had shown increase in chromosomal abnormalities when used solely or in combination and the chromosomal abnormalities remained within normal range.

3- Relative to positive control group both vitamins A and C significantly increased the percentage of the transformed lymphocytes ($P < 0.01$) while combined vitamin A and C showed highly significant increase in transformed lymphocytes ($P < 0.005$).

4- Pretreatment with either vitamin A or vitamin C solely or combined showed no prophylactic effect on the liver toxicity, chromosomal abnormalities or the percentage of the transformed lymphocytes.