**البحث الخامس :** بحث **فردي** غير مشتق من رسالة ولم يسبق تقييمه **منشور دولى**

**عنوان البحث باللغة الانجليزية:**

**The Impact of Ascorbic acid on Histopathological, Biochemical, Pharmacological, and Immunological Toxicity of Chronic Lead acetate Exposure on The Spleen in a Rat Model**

**عنوان البحث باللغة العربية:**

**تأثير حمض الأسكوربيك على السمية النسيجية والكيميائية الحيوية والدوائية والمناعية للتعرض المزمن لخلات الرصاص على الطحال في فئران التجارب .**

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Objective To evaluate the effect of vitamin C on histopathological, biochemical, and immunotoxicity of chronic lead exposure in the spleen of a rat model.

## Methods :

The rats were divided into five groups of 10 rats each: group I received normal saline orally as a control group; groups II and III received lead acetate for 4 and 8 weeks, respectively; and groups IV and V received lead acetate and vitamin C for 4 and 8 weeks, respectively. The spleen was excised and processed for light, electron microscopic, histopathological, and biochemical analyses. Quantitative assessments of matrix metalloproteinase-2 (MMP-2), MMP-9, interleukin-2 (IL-2), IL-6, and tumor necrosis factor-alpha gene expressions were performed by realtime PCR.

## Results :

The examination of control and vitamin C with lead acetate supplemented groups revealed normal splenic architecture. In contrast, the spleen of lead-intoxicated groups exhibited degenerative changes in the spleen, with a significantly decreased expression of IL-2, glutathione peroxidase, superoxide dismutase, and hemoglobin ($p<0.05$) , with significantly increased proinflammatory cytokines iL6 and tumour necrosis factor -

alpha expressions, concomitantly with increased oxidative products (malondialdehyde) and protease enzymes (MMP-2 and MMP-9) in the spleen tissues. The coadministration of vitamin C with lead for 4 weeks markedly resolved these changes

## Conclusion :

This study may specify the efficiency of vitamin C in lead toxicity prevention in the spleen, represented by the reduced splenic harmful changes produced by lead administration.