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Inhibitory effect of sodium selenite on ferric nitrilotriacetate-induced oxidative stress in mice kidney tissues

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Objectives: Intraperitoneal injection of ferric nitrilotriacetate (Fe-NTA) to laboratory animals leads to oxidative stress, lipid peroxidation (LPO) and tissue injuries. However, recent reports indicate that selenium can inhibit oxidative stress, and delays the benign tumor conversion into malignant carcinoma. In this study we showed that selenium can inhibit the harmful effects of Fe-NTA in mice kidneys. **Methods:** Female albino swiss mice were divided into 11 groups. Group-I received saline normal and served as control. Different doses of selenium (0.5, 1, 1.5 mg /kg) were injected before and after Fe-NTA treatment. Also the groups of animals received either selenium (0.5, 1, 1.5 mg/kg) or Fe-NTA (9 mg Fe/kg) alone. The selenium was injected daily for a period of 21 days. All the animals were killed and the kidneys were taken out. The biochemical estimation such as protein and LPO were carried out on the kidney tissue. **Results:** selenium at the dose of 0.5 mg/kg inhibits the LPO induction-induced by Fe-NTA. Other doses of selenium (1 and 1.5 mg/kg) were not effective on the inhibition of LPO. Our data indicate that selenium is more effective before Fe-NTA treatment. **Conclusion:** The results indicated that the inhibitory effect of selenium may act through different mechanisms and involvement of selenium in the diminishment of LPO may be due to inhibition and scavenging harmful free radicals.

Key words: Ferric nitrilotriacetate, Sodium selenite, Oxidative stress, Lipid peroxidation.

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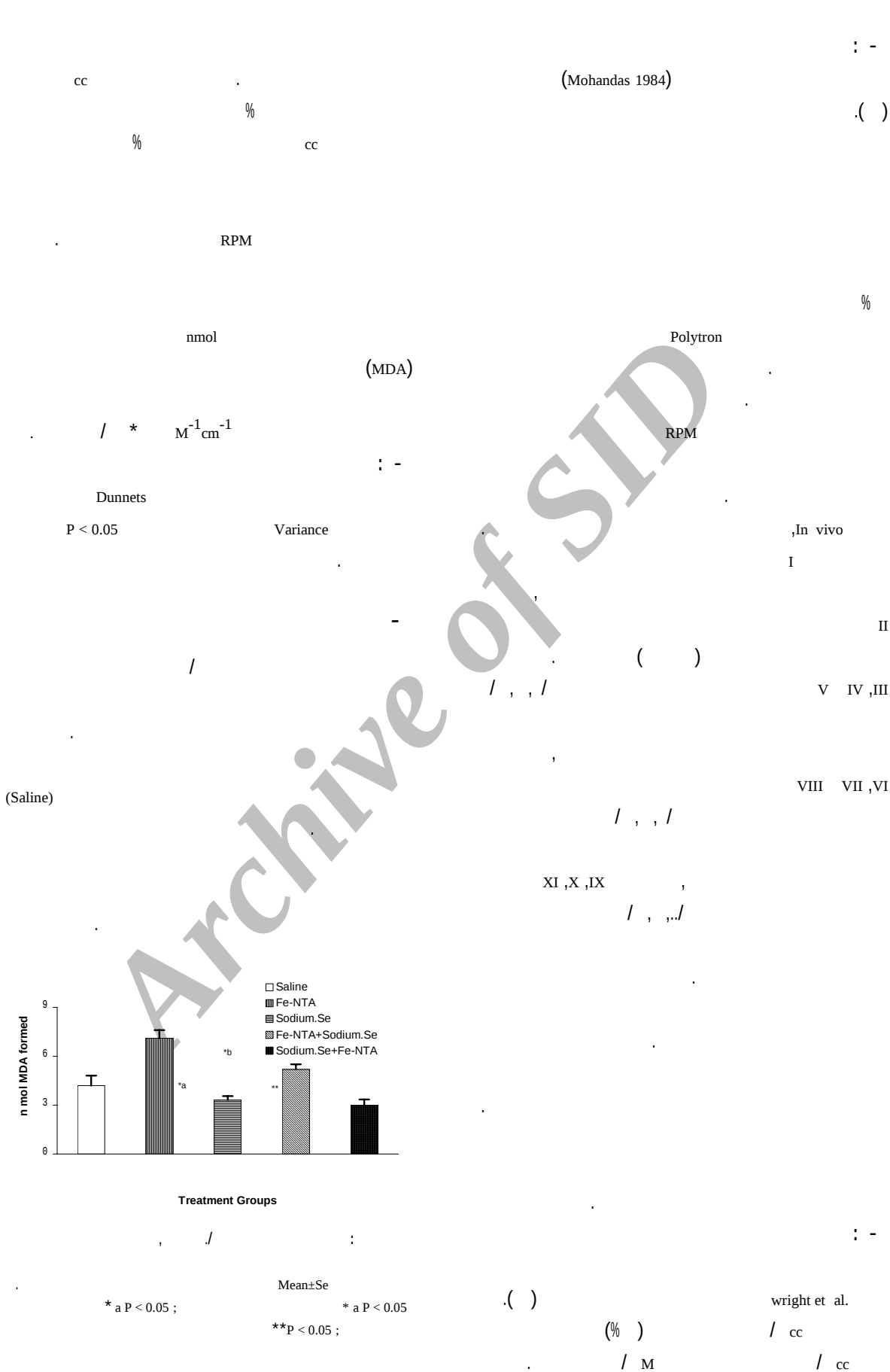
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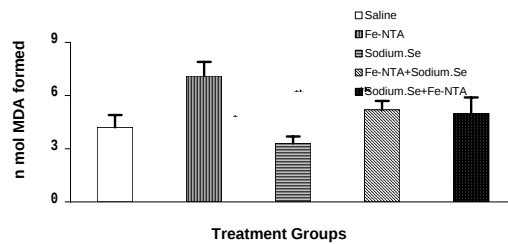
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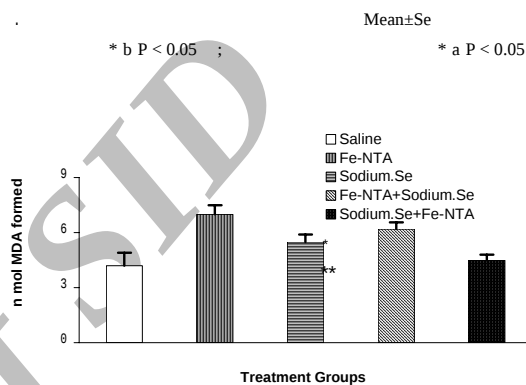


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Mean±Se

* P < 0.05

Dose mg/kg	Saline	Sodium selenite	Fe-NTA+	
			Sodium selenite	Sodium selenite+ Fe-NTA
0	0	0	0	0
0.5	0	0	0	0
1	0	2	3	3
1.5	0	4	3	2

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