

# High Dose Vitamin C Improves Inflammatory Markers and Clinical Outcome of Patients with Acute Respiratory Distress Syndrome

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## Abstract

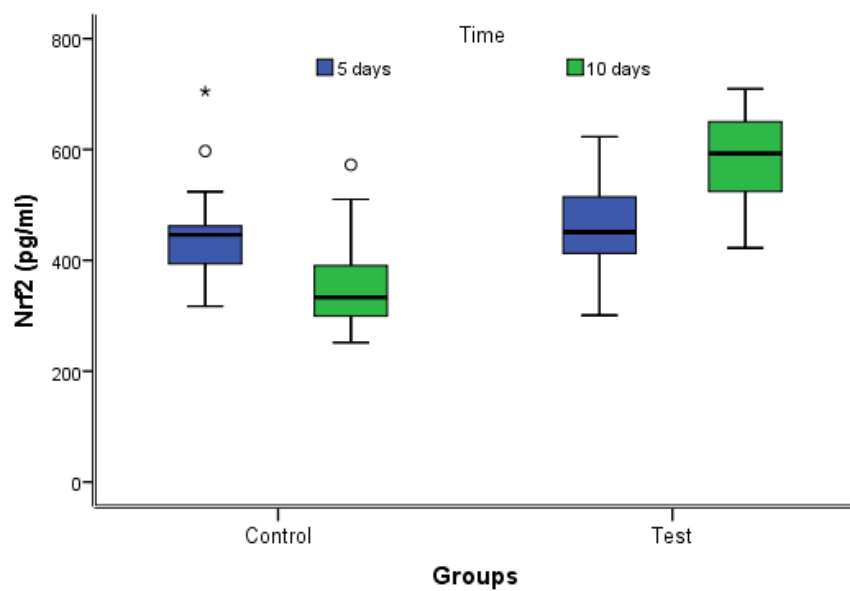
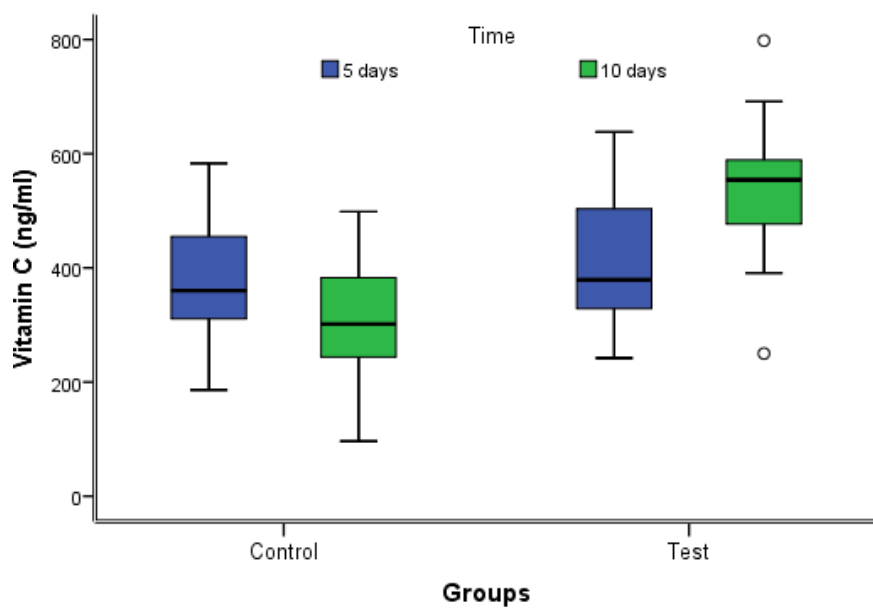
**Objectives:** To assess the efficacy, tolerability and clinical outcome of high dose IV Vitamin C administration in patients with Acute respiratory distress syndrome (ARDS). **Design:** A prospective, randomized, controlled, open-label study. **Setting:** Intensive Care Unit of Embaba-Chest Hospital, Cairo, Egypt. **Patients:** Forty clinically and radiologically diagnosed cases of eligible ARDS patients were randomized to either, Group 1 (Control); 20 patients received conventional ARDS management, or Group 2 (Test); 20 ARDS patients received IV Vitamin C 10 g on two divided doses, both for 10 days. **Interventions:** Vitamin C, Interleukin 8 (IL8) and nuclear factor erythroid 2-related factor 2 (Nrf2) levels together with PaO<sub>2</sub>/FiO<sub>2</sub> were all measured for both groups at baseline and after 10 days. **Main Results:** Groups were comparable at baseline. After 10 days of Vitamin C administration, a significant increase ( $P<0.001$ ) in levels of Vitamin C, Nrf2 and PaO<sub>2</sub>/FiO<sub>2</sub> together with a significant decrease ( $P<0.001$ ) in IL8 was noted in test versus control group. Number of patients weaned off mechanical ventilation MV was significantly higher in test versus control groups (15 versus 6,  $p=0.004$ , respectively). Survival and occurrence of side effects were comparable between groups. **Conclusions:** Administration of 10 g IV Vitamin C in 2 divided doses daily for 10 days in ARDS patients improved lung functions, pulmonary oxygenation, oxidative stress and inflammatory markers and weaning off MV and reduced IL8 levels. Vitamin C was tolerable with no significant side effects or drug interactions reported throughout the 10 days-treatment. (Clinicaltrials.gov Registration number: NCT03780933)

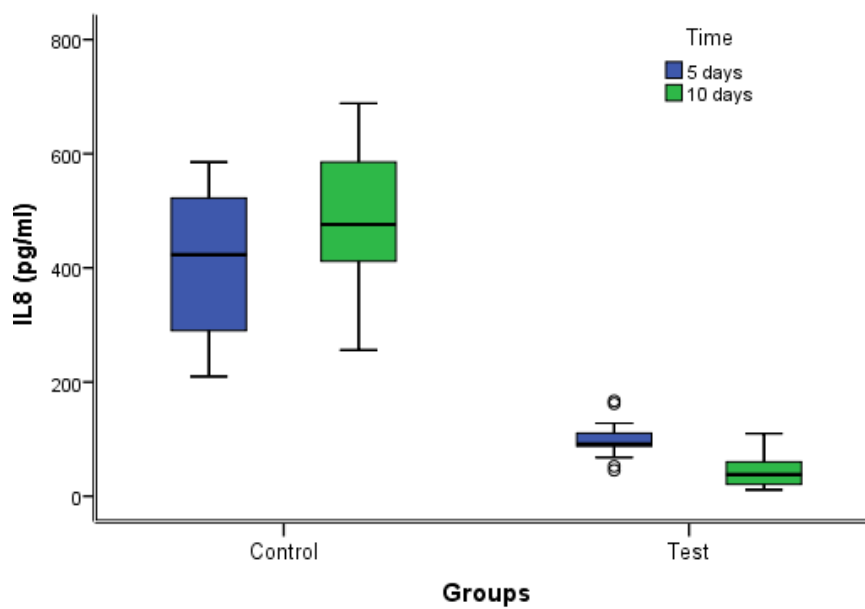
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