



## **Combining Metal Chelator and Antioxidant Improves Amelioration of Induced Lipid Peroxidation in the Human Erythrocyte Membrane**

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**ABSTRACT** The role of unliganded iron in oxidative stress (OS) suggests the therapeutic value of removing ionized iron with a chelator, such as ethylenediaminetetraacetic acid (EDTA), in combination with an antioxidant to provide more effective therapy. Hence, the present study seeks to investigate the systemic impact of EDTA and antioxidant Methylsulfonylmethane (MSM), individually and in combination, on erythrocytic lipid peroxidation marker, malondialdehyde (MDA). Blood from 60 healthy volunteers was obtained, erythrocytes separated, incubated with hydrogen peroxide to obtain OS-induced RBC ( $OSI_r$ ) which were further incubated with EDTA, MSM or EDTA+MSM for 15/30/60 minutes. MDA showed maximum reduction after 30 min, which was 16.7, 30 and 46.8 percent respectively after incubation with EDTA, MSM and EDTA+MSM. Results indicate independent and additive roles of chelator and antioxidant in reducing lipid peroxidation. In conclusion, it is suggested that the utility of combining antioxidant with chelator is a better therapeutic strategy to ameliorate oxidative stress.