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## Green tea extract: Its potential protective effect on bleomycin induced lung injuries in rats

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Lung fibrosis is a common side effect of the chemotherapeutic agent, bleomycin. Current evidence suggests that reactive oxygen species may play a key role in the development of lung fibrosis. The present work studied the effect of green tea extract on bleomycin-induced lung fibrosis in rats. Animals were divided into three groups: (1) Saline control group; (2) bleomycin group in which rats were injected with bleomycin (15 mg/kg,i.p.) three times a week for four weeks; (3) bleomycin and green tea group in which green tea extract was given to rats (100 mg/kg/day, p.o) a week prior to bleomycin and daily during bleomycin injections for 4 weeks until the end of the experiment. Bleomycin-induced pulmonary injury and lung fibrosis that was indicated by increased lung hydroxyproline content, elevated nitric oxide synthase, myeloperoxidase (MPO), platelet activating factor (PAF), tumor necrosis factor  $\alpha$  (TNF $_{\alpha}$ ), transforming growth factor 1 $\beta$  ( TGF1 $\beta$  ) and angiotensin converting enzyme (ACE) activity in lung tissues. On the other hand, bleomycin induced a reduction in reduced glutathione concentration (GSH). Moreover, bleomycin resulted in severe histological changes in lung tissues revealed as lymphocytes and neutrophils infiltration, increased collagen deposition and fibrosis. Co-administration of bleomycin and green tea extract reduced bleomycin-induced lung injury as evaluated by the significant reduction in hydroxyproline content, nitric oxide synthase activity, levels of MPO, PAF & TNF- $\alpha$  & ACE in lung tissues. Furthermore, green tea extract ameliorated bleomycin-induced reduction in GSH concentration. Finally, histological evidences supported the ability of green tea extract to attenuate bleomycin-induced lung fibrosis and consolidation. Thus, the finding of the present study implies that green tea may serve as a novel target for potential therapeutic treatment of lung fibrosis.

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