EFFECTS OF SOLUBLE NITRIC OXIDE DONOR IN A RABBIT MODEL OF ACUTE LUNG INJURY

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Acute lung injury ALI acute respiratory distress syndrome ARDS is a serious syndrome with lung edema dysfunction of pulmonary surfactant and inflammation dominating in the pathophysiology This study evaluated effects of soluble nitric oxide donor S-nitroso-N-acetyl-penicillamine SNAP treatment in experimentally-induced ALI ARDS Lungs of oxygen-ventilated New Zealand white rabbits were repetitively lavaged with saline ml kg to induce ALI ARDS Then one group of animals was intratracheally given SNAP mg kg one group was non-treated and all animals with ALI ARDS were oxygen-ventilated for additional hours Six animals served as healthy non-ventilated controls After sacrificing animals total counts of leukocytes in blood and total and differential counts of cells and percentage of cell viability in bronchoalveolar lavage fluid BAL were measured Lung edema expressed as wet dry weight ratio was estimated Concentrations of interleukins IL - - and - caspase-endogenous secretory receptor for advanced glycation end-products esRAGE in the plasma and lung homogenates were determined by ELISA methods Oxidative damage of lipids was performed in lung homogenates according to the formation of thiobarbituric acid-reactive substances TBARS In ALI ARDS animals increased total counts of cells mainly neutrophils in BAL and extensive formation of lung edema and production of pro-inflammatory substances were observed compared to controls SNAP decreased leak of cells into the lung and reduced concentrations of pro-inflammatory markers but showed no effect on edema formation Concluding treatment with SNAP decreased number of cells in BAL and pro-inflammatory markers but had no effect on ALI-induced lung edema p