

題名: Clinical and pathological features of fat embolism with acute respiratory distress syndrome

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摘要: FES (fat embolism syndrome) is a clinical problem, and, although ARDS (acute respiratory distress syndrome) has been considered as a serious complication of FES, the pathogenesis of ARDS associated with FES remains unclear. In the present study, we investigated the clinical manifestations, and biochemical and pathophysiological changes, in subjects associated with FES and ARDS, to elucidate the possible mechanisms involved in this disorder. A total of eight patients with FES were studied, and arterial blood pH, PaO₂ (arterial partial pressure of O₂), PaCO₂ (arterial partial pressure of CO₂), biochemical and pathophysiological data were obtained. These subjects suffered from crash injuries and developed FES associated with ARDS, and each died within 2 h after admission. In the subjects, chest radiography revealed that the lungs were clear on admission, and pulmonary infiltration was observed within 2 h of admission. Arterial blood pH and PaO₂ declined, whereas PaCO₂ increased. Plasma PLA₂ (phospholipase A₂), nitrate/nitrite, methylguanidine, TNF- α (tumour necrosis factor- α), IL-1 β (interleukin-1 β) and IL-10 (interleukin-10) were significantly elevated. Pathological examinations revealed alveolar oedema and haemorrhage with multiple fat droplet depositions and fibrin thrombi. Fat droplets were also found in the arterioles and/or capillaries in the lung, kidney and brain. Immunohistochemical staining identified iNOS (inducible nitric oxide synthase) in alveolar macrophages. In conclusion, our clinical analysis

suggests that PLA(2), NO, free radicals and pro-inflammatory cytokines are involved in the pathogenesis of ARDS associated with FES. The major source of NO is the alveolar macrophages.