Extracellular matrix turnover, angiogenesis and endothelial function in acute lung injury: Relation to pulmonary dysfunction and outcome

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Abstract:

Background: Acute lung injury (ALI) is a syndrome with a diagnostic criteria based on hypoxemia and a classical radiological appearance, with acute respiratory distress syndrome at the severe end of the disease. Facts recommended the occurrence of rupture of the basement membranes and interstitial matrix remodeling during ALI. Matrix metalloproteinase (MMPs) participate in tissue remodeling related with pathological conditions such as acute lung injury. We hypothesized the interrelationships between extracellular matrix (ECM) turnover as MMP-9 and indicator of angiogenesis such as angiopoietin-2 (Ang-2) as well as plasma von Willebrand factor (vWF) and their correlation with arterial partial pressure of oxygen (PaO2), oxygen saturation (SaO2) and mortality in ALI/ARDS. Materials and Methods: 88 mechanically ventilated patients [68 male, mean (SD) age 61 (10) years] were compared to 40 healthy controls [36 male, mean (SD) age 57 (10)]. All biomarkers were measured by Enzyme linked immunosorbeant assay (ELISA). Oxygenation, body temperature, leucocytes, and platelet counts were noted. Results: Plasma levels of all biomarkers were significantly different, among ALI/ARDS subjects (p

Keywords:

Matrix metalloproteinase, angiopoietin-2, von Willebrand factor, acute lung injury.

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