
Letter to the Editor

The utility of biomarkers for the action of endothelium and epithelium of the pulmonary microvascular is unknown (1). The biomarkers in acute respiratory distress syndrome (ARDS) can affect either cellular activation or cell injury and have an important role in ARDS treatment (2). ARDS patients have an executive phase with some degrees of damage like edema and necroses. Then, the fibro-proliferative phase will happen. To understand the mechanism of repair, we focus on the function of alveolar type I (3).

Inflammatory cytokines

The inflammatory response in ARDS can be either direct (like pneumonia) or indirect (like systemic inflammation). The antigenic levels of inflammatory biomarkers are more important than balance with them. One of the most important cytokines in the early phase of ARDS is IL-1 β ; which causes the release of pro-inflammatory chemokine leading to edema; it is increased in plasma; it could be a therapeutic target (3). Another pro-inflammatory cytokine is TNF- α , stimulating other immune cells. Pharmacological agents are modulated by TNF- α and also, it can cause pulmonary edema (3).

Finally, IL-6 and IL-8 are two other pro-inflammatory cytokines. IL-8 plays an important role in some immune cells. Possibly, the level of these interleukins in bronchoalveolar lavage fluid (BALF) is associated with mortality (4). Some studies show a mixture of IL-8 and IL-8 autoantibody has an inhibitory action on neutrophil recruitment and has the ability via the FC γ RIIa to possess pro-inflammatory activities. The pathway of this cytokine and immune complex can be used for therapeutic purposes (5-7). Other cytokines possess anti-inflammatory actions. The research is done for using them as therapeutic targets. In addition, there is an important effect of endogenous anti-inflammatory soluble receptors.

Coagulation and Fibrinolysis

Activation of the inflammatory cascade results in activation of the coagulation system. Maybe there would be a role in the coagulation system in the treatment of ARDS; including activated protein C: APC (7). However, the role of platelets could not be neglected while they are related to different cytokines (8).

Growth factors

This factor plays a major role in the repair and resolution of ARDS with an unknown mechanism. Different immune cells and a wide range of mediators have interactions to produce their effects. Growth factors targeted in ARDS either works through tyrosine kinase receptors or serine-threonine kinase receptors (9-11).

Biomarkers of alveolar epithelial/endothelial Injury

The alveolar epithelium type I and II have a crucial role in acute lung injury and its healing. Clara cells, on the other hand, secrete a protein named "Clara Cell-specific protein"; endothelial dysfunction has an important role in lung injury (12, 13).

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