Effect of ulinastatin on HMGB1 expression in rats with acute lung injury induced by sepsis

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ABSTRACT. The aim of this study was to investigate the influence of ulinastatin (UTI) on high mobility group box 1 (HMGB1), tumor necrosis factor (TNF)-α, and interleukin (IL)-6 expression in acute lung injury (ALI) rats with sepsis caused by cecal ligation and puncture (CLP) surgery, as well as to examine the underlying biological mechanism. Thirty rats were randomly and evenly divided into sham (control), CLP, and CLP + UTI groups. Thirty minutes after the surgery, the rats in the CLP + UTI group received UTI via the caudal vein, while normal saline was administered to rats in the other groups. Blood, lung tissues, and bronchoalveolar lavage fluid (BALF) were collected at different time points (6, 12, 24, and 48 h) after surgery for determination of related indicators. Compared with the CLP group, rats in the CLP + UTI group exhibited higher seven day survival rates, less lung injury, and decreased HMGB1 expression in the lung tissue, serum, and BALF. In addition, the levels of TNF-α and IL-6 at 24 h in the CLP + UTI group were markedly lower than those in the CLP group. These results suggest that
by deregulation, UTI might decrease the lung injury and increase the survival time of ALI rats by downregulating HMGB1 expression as well as by inhibiting TNF-α and IL-6 levels in serum and BALF.

**Key words:** Acute lung injury; Ulinastatin; High mobility group box 1; Tumor necrosis factor α; Interleukin-6