Letter

A role for adrenomedullin in the pathogenesis of alveolar edema

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Christ-Crain and colleagues [1] established in their work a close relationship between pro-adrenomedullin levels and severity of community acquired pneumonia. This raises the question of whether this peptide or its precursor adrenomedullin are involved in the pathogenesis of the respiratory compromise in pneumonia. Adrenomedullin induces nitric oxide (NO) production in endothelial cells through an increase in intracellular calcium levels, which activates NO synthetase [2]. NO has been linked to endotoxin induced acute lung injury in which the NO scavenger N-acetyl cysteine reduced exhaled NO levels and lung water [3]. The mechanism by which NO reduces alveolar fluid clearance and contributes to the extent of pulmonary fluid accumulation in lung injury has been clarified: NO reduces both the activity of apical alveolar epithelial sodium channels and the baso-lateral alveolar epithelial sodium-potassium ATPase, which regulate alveolar sodium and water absorption. Sodium absorption hereby generates the osmotic gradient, drawing alveolar fluid through alveolar epithelial aquaporin channels and paracellular pathways [4,5].

Future research needs to investigate the role of adrenomedullin in the generation of pulmonary NO production in lung injury and whether treatments leading to a reduction of adrenomedullin levels can reduce the severity and extent of alveolar edema in pneumonia and septicemia.

Competing interests

The authors declare that they have no competing interests.

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