Abstract Group: 2.1. Acute Critical Care

Keyword 1: ALI (Acute Lung Injury) Keyword 2: Lung injury Keyword 3: No keyword

Title: Effect of imatinib and nilotinib on lipopolysaccharide-induced acute lung injury during neutropenia recovery in a mouse model

Prof. Sook Young 14167 Lee sooklee@catholic.ac.kr MD ¹ and Dr. Chin Kook 14168 Rhee chinkook@catholic.ac.kr MD ¹. ¹ Internal Medicine, Catholic University of Korea, Seoul, Republic of Korea.

Body: Objective: Neutropenia recovery is associated with deterioration in oxygenation and exacerbation of pre-existing pulmonary disease. We aimed to evaluate effect of imatinib and nilotinib on lipopolysaccharide (LPS) - induced acute lung injury (ALI) during neutropenia recovery in a mouse model. Method: We developed a mouse model of ALI during neutropenia recovery. Cyclophosphamide was administrated to induce neutropenia. During neutropenia recovery, ALI was induced by intratracheal instillation of LPS. Imatinib or nilotinib was administrated during neutropenia recovery. Result: The numbers of inflammatory cells and neutrophil in bronchoalveolar lavage fluid in imatinib or nilotinib group were significantly lower than LPS group. Imatinib or nilotinib administration significantly reduced wet/dry ratio and ALI score. The level of myeloperoxidase and tumor necrosis factor-α in imatinib or nilotinib group were significantly lower than LPS group. Attenuation of ALI by imatinib or nilotinib was associated with PDGFRβ and C-kit pathway. Consult: Imatinib or nilotinib effectively attenuated LPS-induced ALI during neutropenia recovery.