

European Respiratory Society Annual Congress 2012

Abstract Number: 4432

Publication Number: P2137

Abstract Group: 5.1. Airway Pharmacology and Treatment

Keyword 1: ALI (Acute Lung Injury) **Keyword 2:** Animal models **Keyword 3:** No keyword

Title: Effect of low level light therapy (LLLT) on an experimental model of LPS-induced lung inflammation

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Body: Acute lung injury (ALI) induced by lipopolysaccharide (LPS) exposure is characterized by cellular infiltrate, edema and altered airway responsiveness. Traditional treatments for ALI include strategies of mechanical ventilation and a variety of drugs such as, corticosteroids and other disease-modifying agents. However these conventional therapies may cause important side-effects that compromise long term therapies. In this sense, Low Level Light Therapy (LLLT) have already demonstrated promising data in reducing airway inflammation. Thus, in the present study we investigated the ability of LLLT to modulate neutrophil infiltration to the lungs. For that, Balb/c mice were submitted to daily dosis of 10 mg of LPS for 3 consecutive days. LLLT group were submitted to irradiation daily at 2, 4 and 6 hours after LPS. Controled groups received PBS and were or not irradiated. On day 4, 24 hours after LPS exposure animals were sacrificed and LBA cellularity, cytokine secretion and airway reactivity by FlexiVent were analysed. Our results demonstrate a significant decrease in total cells and neutrophils recovered from the bronchoalveolar lavage (BAL) of LPS-treated animals after LLLT. We also detected reduced amounts of IL-6 but not IL-17 after LLLT. Airway reactivity to metacholine (Mch) also reduced. In conclusion, our data reveals a promising role for LLLT as an alternative therapeutic approach for acute lung inflammation.