European Respiratory Society
Annual Congress 2012

Abstract Number: 750

Publication Number: P3745

Abstract Group: 3.2. Airway Cell Biology and Immunopathology

Keyword 1: Inflammation **Keyword 2:** Pharmacology **Keyword 3:** COPD - mechanism

Title: Differential effects of atorvastatin, pravastatin, rosuvastatin and simvastatin on lungs from mice exposed to cigarette smoke

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Body: Short-term cigarette smoke (CS) exposure leads to acute lung inflammation through its influence on oxidants/antioxidants imbalance, but lately statins have shows anti-inflammatory and antioxidant effects. Therefore, we aimed analyzing the effects of four different statins on the lungs of mice exposed CS. Male C57Bl/6 mice were divided into six groups (n=8 each): Mice exposed to the smoke from 12 cigarettes/day/5 days (CS group); exposed to smoke from 12 cigarettes per day for 5 days plus atorvastatin (10 mg/kg/day; CS+A group), or pravastatin (5 mg/kg/day; CS+P group), or rousovastatin (5 mg/kg/day; CS+R group) or sinvastatin (20 mg/kg/day; CS+S group); control group was sham-smoked. One day after the last CS exposure, mice were sacrificed, the bronchoalveolar lavage fluid (BAL) was performed and the lungs were removed for histological analysis and homogenized for biochemical analyses. Oxidant levels were reduced in CS+S ($p<0.05$); DPPH levels were increased in CS+A, CS+R and CS+S ($p<0.05$); nitrite levels were reduced in CS+P, CS+R and CS+S ($p<0.05$); MCP-1 levels were reduced in CS+R and CS+S ($p<0.01$); hydroperoxides levels were reduced in CS+A, CS+R and CS+S ($p<0.001$); catalase activity was reduced in CS+P ($p<0.01$); SOD activity were reduced in CS+A, CS+P ($p<0.01$) CS+R and CS+S ($p<0.05$) all when compared with CS group. These results suggest that simvastatin is the best treatment for acute lung injury induced by CS due to reduction of inflammatory and oxidant markers.