

# European Respiratory Society Annual Congress 2013

**Abstract Number:** 6068

**Publication Number:** PP141

**Abstract Group:** 1.1. Clinical Problems

**Keywords:** no keyword selected

**Title:** LSC 2013 abstract - Influence of AECOPD to monocytes apoptosis and chemotaxis and macrophages phagocytosis

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**Body:** Background: Monocytes/macrophages are associated with inflammation during chronic obstructive pulmonary disease (COPD). Aim: To assess influence of AECOPD to monocytes apoptosis and chemotaxis and macrophages phagocytosis. Methods: Forty five patients during AECOPD and the same after recovery from exacerbation as well as 20 healthy individuals were enrolled to this study. Monocytes from peripheral blood and macrophages from sputum were isolated by high density gradient centrifugation and magnetic labeling system. Annexin-V FITC was used to detect apoptotic monocytes. IL-8 was used as a chemoattractant to investigate chemotaxis and labeled *S. aureus* bacteria were used for macrophages phagocytosis assay. Results: Peripheral blood monocytes apoptosis was significantly reduced and chemotaxis enhanced in patients during AECOPD compared with stable COPD and HI ( $p < 0.05$ ). Meanwhile, sputum macrophages phagocytic activity was significantly decreased in patients during AECOPD compared with stable COPD and HI ( $p < 0.05$ ). Conclusion: Our results show, that reduced monocytes apoptosis and increased chemotaxis are important mechanisms for enhanced inflammatory cells migration and accumulation to the airways. Decreased sputum macrophages phagocytosis lets us suggest that defective pathogen removal may prolong chronic inflammation.