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**Title:** LSC 2013 abstract - Identification of granulocytic asthma in peripheral blood

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**Body:** Introduction: Identification of inflammatory asthma phenotypes currently requires sputum induction. This technique is invasive, has a high variability, is time-consuming and a burden for patients. Therefore, there is a strong need for a routine blood test to establish the inflammatory phenotype of asthma. We designed a clinical cohort study (AIR-study, NCT01611012) in 115 asthma patients visiting the outpatient clinic to compare the results of such a blood test to sputum analysis. This abstract focusses at the preliminary results in 34 patients. Objective: To assess whether expression of active FcγRII(CD32) on neutrophils and eosinophils from peripheral blood enables the diagnosis of an inflammatory phenotype of asthma. Methods: 34 asthma patients were recruited at the outpatient clinic of the UMC Utrecht. Clinical parameters were gathered and FENO, sputum induction and blood tests were performed. Eosinophils and neutrophils in whole blood were stained with a FITC labeled antibody against active FcγRIIa receptor (clone A17) in the absence and presence of the activator fMLP (1 μM). Subsequently, fluorescence intensity was measured by flow cytometry. Results: Expression of active FcγRII (CD32) on eosinophils at basal level and after stimulation (fMLP) showed primed cells in paucigranulocytic asthma, and refractory cells (low responsiveness for fMLP) in case of granulocytic asthma,  $p = 0,045$  in an independent t-test. FENO values were lower in paucigranulocytic asthma compared to granulocytic asthma ( $p = 0.009$ , independent t-test). Conclusion: Refractory blood eosinophils and higher FeNO values were found in those patients that suffer from granulocytic asthma. Expression CD32 on eosinophils after fMLP

Exhaled Nitric Oxide in inflammatory phenotypes of Asthma