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Title: Heterogeneous levels of CD86+CD209+ and CD83+CD209+ dendritic cells in patients with different severity of bronchial asthma

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Body: Background. Bronchial asthma (BA) is characterized by persistent inflammation in the airways in response to allergens or other triggers. Dendritic cells (DC) are critical for controlling the immune response to various types of antigens. The intensity of the inflammation determines the severity of asthma. Levels of costimulatory molecules expression on DC are important in immune response balancing and polarization. Our study sought to determine whether numbers of CD86+CD209+ and CD83+CD209+ DC are related to airway inflammation and disease severity. The Aim of our study was to investigate the expression of surface molecules on DC in patients with different severity of bronchial asthma compared to healthy persons. Method. Mature DC were cultured from peripheral blood monocytes of healthy control (n=17) and asthmatic patients (mild BA, n=19; severe BA, n=24) using IL-4 and GM-CSF during 6 days. DC were labeled for CD86, CD83 and CD209 and analysed using flow cytometry. Result. Number of CD86+CD209+ DC was significantly increased in severe BA compared to mild asthma and healthy donors. Patients with mild BA had increased levels of CD83+CD209+ compared to severe asthma and control. Conclusion. Our findings suggest that increased levels of costimulatory molecules on DC might contribute airway inflammation. Increase CD86+CD209+ and CD83+CD209+ is important in balancing immune responses for maintenance the allergic inflammation in asthma.