

European Respiratory Society Annual Congress 2012

Abstract Number: 2729

Publication Number: P814

Abstract Group: 3.2. Airway Cell Biology and Immunopathology

Keyword 1: Asthma - mechanism **Keyword 2:** Dendritic cell **Keyword 3:** Immunology

Title: Expression of factor XIIIa+ cells, CD207+ Langerhans cells and CD83+ mature dendritic cells in fatal asthma

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Body: Rationale: Dendritic cells (DCs) are a heterogeneous class of antigen presenting cells that initiate immune responses in asthma. Little information is known about the expression of different DCs in the airways and lymph nodes (LNs) of asthmatics. Our aim was to study the expression of CD83+ mature DCs, CD207+ Langerhans cells, and factor XIIIa+ reticular DCs in mediastinal LNs and airways of patients that died of asthma. Methods: We studied 10 non-smoker fatal asthma patients (FA) and 8 non-smoker individuals that died of non-pulmonary causes (controls, CTRLs). Immunohistochemistry was performed with antibodies against CD83, CD207 and factor XIIIa. The total area stained with anti-CD83/CD207 antibodies was measured on the cortical area of the LNs and on the internal, airway smooth muscle and external layers of the cartilaginous airways. Factor XIIIa was analyzed only on LNs. Results: CD83 and CD207 stained cells in the airways and all antibodies stained cells in the LNs of FA and CTRLs. No differences were found in the areas stained with CD83, CD207 and factor XIIIa between FA and CTRLs. In fatal asthma CD83+ stained area in LNs correlated with CD207+ stained area in LNs ($r = 0.65$; $p = 0.04$) and CD207+ stained area in LNs correlated with CD207+ stained area in the internal ($r = 0.79$, $p = 0.006$), muscle ($r = 0.78$, $p = 0.008$) and external ($r = 0.73$, $p = 0.02$) layers of the airways. Conclusion: A fatal asthma episode is not associated with an increased expression of Langerhans cells, factor XIIIa+ reticular cells and mature CD83+ DCs in cartilaginous airways or thoracic LNs. In asthma however, some DC cell trafficking between airway mucosa and LNs seems to occur.