J Pulm Respir Med 2018, Volume 8
DOI: 10.4172/2161-105X-C2-031

# 7th International Chronic Obstructive Pulmonary Disease Conference



## Genetic switches between cancer and emphysema resolution of cigarette-smoke induced inflammation

**Sandra Grumelli**
University in Córdoba, Argentina

Cigarette smoke initiates an inflammatory response that has an aftermath long after quitting. Segregation of genes expressed in former smokers by their co-founding diseases, provided 23 genes in the intersections that may be responsible for cancer or emphysema. Genes expressed only in cancer patients were *BHLH, FPRL2, CD49D, DEADH, NRs4A3, MBLL, GNS, BE675435, ISGF-3* and *FLJ23462. HIV-1Rev* was the only gene expressed in emphysema and cancer patients' intersection. Genes highly expressed only in COPD group were *IL-1A, SOX13, RPP38; TBXA2R, NPEPL1, CFLAR, TFEB, PRKCBP1, IGF1R, DDX11, KCNAB1.* The out-layers genes significantly expressed in all patients and down-regulated in emphysema were *MMP9, PLUNC, CEACAM5, NR4A1* and the up-regulated were *F2R, COL15A1, PDE4C* and *BGN.* Chosen genes checked at the protein level on all immune cells showed that neutrophils from cancer patients had increased expression of *CD49d,* and their total number was also increased in BAL (154%). Macrophages in the lung of patients with emphysema were associated to significant increase of adhesion molecule CD58 and to significant CD95 decrease, indicating that they do not die. Patients with cancer and emphysema as co-founding disease had only one gene, *ANXA2,* which is essential for attachment of bronchial epithelial cells to the matrix by secretion of collagen VI (COL6). Genes expressed in patients only with emphysema, like *SOX13*, favors Th17 migration to the lung facilitating development of autoimmunity, and *RPP38* is an autoimmune antigen in scleroderma, an elastin rich tissue like the lung, may also be an antigen in emphysema. Overall, we found that cancer requires stickier and greater number of neutrophils in the lung, while emphysema requires stickier and macrophages with greater longevity that lead to matrix destruction and together with higher expression of *SOX13* and *RPP38* promotes autoimmunity.

sgrumelli@yahoo.com