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Title: Regulator and effector T lymphocytes in late stages of non small cell lung cancer and chronic obstructive pulmonary disease

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Body: The outcome of lung caner may be determined by anticancer immunresponse. There are only few data available on how DCs (dentritic cell), effector T, NK cells and various regulatory subsets like Treg-s (foxp3+), or NK T-s respond to lung cancer (LC). Blood was drawn from 50 pts (age 36 to 77) suffering from non-small cell lung cancer in either III/B or IV stages. Since 80% of LC suffered also from chronic obstructive pulmonary disease (COPD), one control group was formed from COPD (n=25) and another one from healthy individuals (n=25). Peripheral blood mononuclear cells were separated and analyzed by FACS using labeled monoclonal antibodies. Activated effector T cells were determined by CD4CD45RO, the naive T cells were specified by CD4CD45RA, the regulatory T lymphocytes by CD4highFoxP3 and dendritic cells by Lin1- HLA DR positivity. The NKT cells were defined by Va24Vb11 (iNKT) and CD161CD3 (NKT) markers. In lung cancer, the ratio of naiv CD4+ lymphocytes was increased as compared to COPD ($p<0.001$). The ratio of dentritic cells was decreased in LC as compared to healthy control ($p<0.001$). The ratio of regulatory T lymphocytes (CD4+FoxP3+) was significantly elevated in lung cancer when compared with COPD ($p<0.001$ and healthy groups ($p<0.01$). The ratios of iNKT and NKT cells were elevated in LC when compared to COPD ($p<0.01$). The antigen specific immune responses diminished, regarding the decreased level of dentritic cells and increased level of naiv CD4 cells. The elevation of NKT cells represents the propagation of an antigen independent immune response. The rise of regulatory T cells facilitates tumor progression.