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Immunoescape in lung cancer: A possible pathway via Rcas1's expression

Nikolaos Tsoukalas[1,2], Spyros Siakavellas[2], Maria Tolia[2], Ioannis Vamvakaris[2], Ioannis Kostakis[2], Evangelos Bournakis[2], Ioannis Sfiniadakis[3], Andreas Karameris[4] and Stamatios Theocharis[2]

[1]Medical Oncology Department of 401 General Military Hospital, Athens Greece
[2]National and Kapodistrian University of Athens, Greece
[3]Pathology Department of NNA, Greece
[4]Pathology Department of 417 NIMTS, Greece

Introduction: Lung cancer is an important health problem worldwide due to its incidence and mortality. RCAS1 (Receptor-binding Cancer Antigen expressed on SiSo cells) is a protein that is expressed in different types of cancer and seems to be involved in the process of the tumour cells' escape from the immune system surveillance (immunoescape).

Aim: The aim of this study was to evaluate the clinical significance of RCAS1 immunohistochemical expression in non small cell lung cancer (NSCLC).

Methods: Tissue microarrays of tumor specimens from 112 patients with newly diagnosed primary NSCLC were constructed. The sections were stained with monoclonal antibodies against RCAS1, Ki-67 and CD3 using immunohistochemistry and they were studied through computerized image analysis. Associations between RCAS1, Ki-67 and CD3 expression and clinicopathological variables and survival were analyzed. In all cases p-value≤0.05 was considered significant.

Results: RCAS1 expression was higher in grade III tumors, regardless of the histological type (p=0.004), and in adenocarcinomas with lymphovascular invasion (p=0.014). A positive correlation between RCAS1 and Ki-67 levels was observed (p=0.002). Moreover, there was an inverse correlation of survival interval with RCAS1 (HR=0.985, p<0.001, 95% CI 0.977-0.994) and Ki-67 (HR=1.046, p=0.003, 95% CI 1.016-1.078) levels and patients with higher expression of RCAS1 or Ki-67 had a significantly shorter survival than those with lower expression. There was also an inverse correlation between RCAS1 expression and the percentage of CD3(+) lympocytes inside the tumor (p<0.001). Finally, there was a positive correlation between the percentage of CD3(+) lympocytes inside the tumor and the overall survival (HR=0.687, p=0.094, 95% CI 0.442-1.069).

Conclusions: RCAS1 could be a useful immunohistochemical marker indicating tumor aggressiveness and predicting poor prognosis for patients with NSCLC

tsoukn@yahoo.gr