

THE NOVEL INTERLEUKINS IL-27, IL-29, IL-31 AND IL-33 IN SERUM AND BALF OF PATIENTS WITH NONSMALL CELL LUNG CANCER

W. Naumnik¹, B. Naumnik², K. Niewiarowska¹, M. Ossolinska¹, E. Chyczewska¹

¹Department of Lung Diseases and ²Department of Nephrology, Medical University of Bialystok; Zurawia 14, 15-540, Bialystok, Poland, naumw@post.pl

There are several antiproliferative and angiogenic factors, recently have been discovered (IL-27, IL-29, IL-31 and IL-33), but they have not been tested yet in lung cancer patients. The aim of this pilot study was to assess the clinical usefulness of determination of IL-27, IL-29, IL-31 and IL-33 in advanced stages of lung cancer. The study included 45 Nonsmall Cell Lung Cancer patients (38 males; mean age 61.9). Serum and bronchoalveolar lavage fluid (BALF) concentrations were evaluated by ELISA method. The comparative groups consisted of patients with sarcoidosis (BBS, n=15), hypersensitivity pneumonitis (HP, n=15) and healthy subjects (n=15). The serum IL-29 levels were higher in NSCLC patients than in the sarcoidosis group (43.2 vs 35.22 pg/ml, $p < 0.05$). However, serum IL-27, IL-31 and IL-33 did not differ markedly between: NSCLC, BBS, HP and the Control group. Concentrations of IL-29 and IL-31 in BALF did not differ significantly between investigated groups. In all groups levels of IL-27 and IL-29 are significantly higher in serum than in BALF (NSCLC: IL-27 serum vs BALF- 17.69 vs 14.99 pg/ml, IL-29 serum vs BALF- 43.2 vs 20.49 pg/ml; BBS: IL-27 serum vs BALF- 17.41 vs 14.29 pg/ml, IL-29 serum vs BALF- 35.22 vs 20.40 pg/ml; HP: IL-27 serum vs BALF- 17.69 vs 14.62 pg/ml, IL-29 serum vs BALF- 43.14 vs 23.36 pg/ml; Healthy: IL-27 serum vs BALF- 16.85 vs 13.84 pg/ml, IL-29 serum vs BALF- 45.17 vs 18.53 pg/ml). Concentrations of IL-31 in BBS, HP and Control groups tended to higher in BALF than in serum. These differences were significantly in NSCLC patients. Patients in stage IIIB of NSCLC had higher serum levels of IL-29 than in stage IV (62.66 vs 43.20 pg/ml, $p < 0.05$). Lung cancer patients with partial remission (PR) after chemotherapy had significantly higher concentration of IL-27 in BALF than patients with stabilization (SD) (16.06 vs 14.92 pg/ml, $p < 0.05$). However, patients with SD had higher levels of IL-29 in BALF than patients with progressive disease (22.42 vs 19.51 pg/ml, $p < 0.05$). A negative correlation was found between serum IL-31 levels before therapy and time to progression of NSCLC ($R = -0.45$, $p = 0.038$). Conclusion: Determination of IL-27, IL-29 and IL-31 in serum and BALF can be useful in clinical practice, but their practical significance needs further studies.