Significant correlation between interleukin-10 expression and progression of non-small cell lung cancer through heme oxygenase

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Abstract

Interleukin (IL)-10 may play an important role in controlling cancer growth and metastasis. Some studies have shown an inhibitory effect of IL-10 on cancer growth, others suggest an adverse prognostic factor for this cytokine. IL-10 induces heme oxygenase (HO)-1, an oxidative stress protein which mediates the anti-inflammatory effect of IL-10 in mouse macrophages. Using immunohistochemical analysis, we analyzed IL-10 and HO-1 expression in macrophages of paired specimens of lung cancer and cancer-free lung tissue from 29 patients undergoing surgery for non-small cell lung cancer (NSCLC) (stages I, II, III, IV). The percentage of IL-10+ve macrophages of lung cancer was lower in

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patients with stage I NSCLC than in patients with stages II, III, IV [median (interquartile range): 8.3 (0.75-12.6) vs 37.1 (10.1-68), p< 0.05]. In subjects with stages II, III, IV, the percentage of IL-10+ve macrophages was not significantly different in lung cancer and in cancer-free lung [37.1 (10.1-68) vs 46.5 (9.5-57.5), p= ns]. By contrast, the percentage of HO-1+ve macrophages was significantly lower in cancer than in cancer-free lung [35.6 (7.9-68.8) vs 67.3 (24.1-93), p< 0.05]. In conclusion, IL-10 correlates with NSCLC progression, likely through an inhibition of heme oxigenase activity. Supported by MURST, A.R.C.A. and CFR

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