Anti-leukemic immunity against U937 cells in uremic patients.

許準榕

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Abstract

To examine anti-tumor immunity in uremic patients undergoing regular hemodialysis, we designed this study using in vitro mononuclear cell (MNC) cultures, with human leukemic U937 cells as the target. MNC were collected and cultured from uremic subjects and age- and gender-matched healthy controls. Conditioned media from the cultures (MNC-CM) were collected after stimulation with various concentrations of phytohemagglutinin (PHA). The proliferation-inhibiting and differentiation-inducing activities of the PHA-MNC-CM on U937 cells were evaluated. The growth inhibition activity of uremic patients' PHA-MNC-CM was lower than that of controls. The differentiation-inducing effects were evaluated by morphological scoring, superoxide production, and monocyte-associated antigen expression (CD14 and CD68). All three parameters demonstrated that the differentiation-inducing effect of MNC-CM increased with increasing doses of PHA. These effects, however, were significantly less in uremic patients compared to controls at higher doses of PHA. The levels of TNF-alpha and IFN-gamma in PHA-MNC-CM increased in a PHA dose-dependent manner and were much higher in the controls. We conclude that the capacity of MNC from uremic hemodialysis patients to produce anti-leukemic immunity is significantly lower than that of healthy controls.