EFFECTS OF CYTOKINES FROM MNC OF SCLERODERMA PATIENTS ON FIBROBLAST PROLIFERATION

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The roles of cytokines on the pathogenesis of scleroderma were evaluated by means of fibroblast proliferation.

MATERIALS AND METHODS

The supernate of unstimulated and LPS-stimulated plastic dish adherent cells from scleroderma patients and normal controls were used as cytokines. The supernate was fractionated by HPLC-TSK Gel-G3000SW. The fibroblast proliferation assay was done by the method of Schmidt. The inhibition test on the activity of the supernate was done with antisera to IL-1α, IL-1β and TNF. IL-1α and IL-1β in the supernate was detected by ELISA.

RESULTS AND DISCUSSION

(1) The supernate of unstimulated and LPS-stimulated MNC from scleroderma patients resulted in significantly greater proliferation of skin fibroblast (scleroderma and normal) than those from normal controls. (2) When the supernate was fractionated by HPLC, high activity was found in the 22-35 kD fraction (peak 25kD) of either scleroderma or normal (Fig.1). (3) The activity of the supernate was partially inhibited by antisera to IL-1α, IL-1β and TNFα (Fig.2). (4) The supernate included various concentrations of IL-1α and IL-1β (Fig.1). A tendency to an increase in the α/β ratio was seen in the scleroderma supernats. These
Kondo H, et al: Cytokines in Scleroderma results indicated that cytokines including IL-1α, IL-1β and TNFα may contribute to the fibrosis of scleroderma.

Fig. 1. Effects on fibroblast proliferation and concentrations of IL-1α and IL-1β in the supernate fractionated by HPLC-TSK Gel-G3000SW.

Fig. 2. Inhibition of proliferating effects of supernate by antisera to IL-1α, IL-1β and TNFα.