MODULATORY EFFECTS OF SERA FROM SARCOIDOSIS PATIENTS ON MONONUCLEAR CELL-INDUCED ANGIOGENESIS

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Sarcoidosis (SAR) is a systemic granulomatous inflammatory disease characterized by recruitment and activation of peripheral blood mononuclear cells to the sites of the disease. Neovascularization is the principal vascular response in chronic inflammation and hypoxia. The aim of the study was to evaluate the effects of sera from SAR patients on the angiogenic capability of different subsets of normal peripheral human mononuclear cells (MNC) in relation to IL-6 and IL-8 serum levels, at various stages of the disease and relate these effects to the presence of extrapulmonary changes. Serum samples from 42 SAR patients were examined. The study population consisted of 12 patients in stage I, 16 patients in stage II, and 14 in stage III. In order to quantify angiogenesis, the Sidky and Auerbach leukocyte-induced angiogenesis assay was performed. MNC were depleted in monocytes using the techniques of glass adherence and phagocytosis of iron particles. IL-6 and IL-8 in sera from SAR patients were evaluated by ELISA assay. Sera from SAR patients induce the angiogenic capability of normal MNC significantly stronger than sera from healthy donors ($P<0.001$). Angiogenic activity of sera in SAR patients depends on the radiological stage of the disease and seems most pronounced in stage II ($P<0.05$). Sera from patients with extrapulmonary changes exerted a stronger effect on angiogenesis than those from patients presenting with thoracic changes only ($P<0.001$). IL-6 and IL-8 level correlated with each other but no correlation was found between IL-6 and IL-8 serum level and angiogenic activity of the investigated sera. Removal of monocytes eliminated the effect of sera from SAR patients on angiogenesis as compared with MNC ($P<0.001$). Sera from SAR patients and from healthy people constitute a source of mediators participating in angiogenesis but sera from SAR patients require monocytes for production of proangiogenic factors.