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Efficiency of autologous bone marrow stem cells transplantation at systemic scleroderma

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At systemic sclerosis on the background of autoimmune disorder inflammatory and fibroplastic reactions are initiated, proliferative/obliterating generalized vasculopathy and progressive fibrosis of internal organs are developed. In this regard, use of bone marrow stem cells (BMSC)- the central organ of immunogenesis that are characterized immunomodulatory (natural suppressor activity) and morphogenetic and also angiogenetic and anti-fibrotic effects can be effective pathogenetic justified method of treatment of systemic sclerosis. The aim of the investigation is - to give clinical and morphological estimation of the effectiveness of autologous bone marrow stem cells transplantation at systemic sclerosis. We observed 30 patients aged from 27 till 38 years, with definite diagnosis of systemic sclerosis (SSc) according to the criteria of the American College of Rheumatologists (ACR, 1980). Duration of the disease was more than 3 years. Resistance to immunosuppressive therapy (D-penicillamine, azathioprine and prednisolone) and high index of autoimmune process activity (EScSG), according to the criteria of the European Group for the Study of SSc formed the basis for carrying out bone marrow stem cells transplantation. Clinical efficacy was estimated by the criteria of the European Group studying SSc. Skin involvement was assessed clinically by changes in modified Rodnan skin score, which is considered as the most obvious clinical sign of scleroderma. Results were also evaluated by serological features (ESR, CRP, γ -globulin, fibrinogen and anti-nuclear antibodies (ANA). Bioptic skin material of top third shin was investigated in stage of induration before and in dynamic of treatment for the morphological assessment of the effectiveness of the treatment. Preparations were stained with hematoxylin and eosine and also Masson-trichrom. Electron- microscopic investigation of the material was performed by the standard method on electron microscope Libra 120 of Carl Zeiss firm. Thus, preculturing autologous hematopoietic stem cells of bone marrow transplantation create conditions for the regulation immune (autoimmune) inflammation on system and local level creating conditions for increasing processes of angiogenesis and create conditions for the restoration of morpho-functional skin condition, improvement in serological markers, stabilization of internal organ function of patients with systemic scleroderma.

Biography

Askarov M B, PhD, MD is the Director at National Research Medical Scientific Center, Department of stem cells transplantation and biotechnology. He has published more than 55 papers in scientific journals. He is specialist in regenerative medicine and stem cell investigators.

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