Autologous hematopoietic stem cell transplantation for severe systemic sclerosis

Target disease: severe systemic sclerosis

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Synopsis

Systemic sclerosis accompanying severe diffuse dermal sclerosis and visceral lesions is a poor-prognosis pathological condition because the five-year survival rate ranges from 50% to 60%. Dermal sclerosis and difficulty in breathing due to interstitial pneumonia seriously affect the quality of patients’ daily life. We attempt to clinically apply autologous hematopoietic stem cell transplantation, which has been conventionally used to treat hematological disorders, to this poor-prognosis severe systemic sclerosis to achieve a cure or remission. Concretely, high-dose immunosuppressive therapy is used to eradicate the self-reactive lymphocytes deeply involved in the pathogenesis of systemic sclerosis and then autologous hematopoietic stem cells are transplanted. Because the immune system re-established by the transplanted hematopoietic stem cells has self-tolerance, a cure or remission of the systemic sclerosis can be expected.

In this research project, we conduct autologous hematopoietic stem cell transplantation in 12 patients with severe systemic sclerosis to evaluate the therapeutic effect.

Method of autologous hematopoietic stem cell transplantation used in this research project

1. Eradication of autoreactive lymphocytes
2. Immune reconstitution

CY: cyclophosphamide
PBSCH: peripheral blood stem cell harvest
HSCT: hematopoietic stem cell transplantation

Related keywords: hematopoietic stem cell transplantation, severe systemic sclerosis