Table 2. Logistic regression analyses for outcome of being CMV positive (CMV$^+$) in marrow and for outcome of possessing gB3 among patients who were CMV$^+$ in marrow

	Odds ratio	95% CI	*P*
Group (CMV$^+$/total)			
Controls (19/151)	1	—	—
AA (33/100)	3.45	1.70-7.00	.0006
Group (gB3$^+$/total CMV$^+$)			
Controls (5/19)	1	—	—
AA (19/33)	7.83	1.72-35.79	.008

Models were adjusted for age. To compensate for a potential overrepresentation of stroma in AA biopsies compared with control aspirates, the aspirated marrow was also cultured to expand the stromal cells. Both aspirated marrow cells and expanded stromal cells were then evaluated by PCR. Combining both tests did not change the frequency of CMV$^+$ samples in the control group.

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To the editor:

Treatment of extensive chronic sclerodermatous graft-versus-host disease with high-dose immunosuppressive therapy and CD34$^+$ autologous stem cell rescue

Beyond many complications of allogeneic hematopoietic stem cell (HSC) transplantation, chronic graft-versus-host disease (cGVHD) still remains one of the most important causes of impaired quality of life. Sclerodermatous cGVHD (SC-GVHD), one of the most disabling forms, resembles systemic sclerosis clinically and histopathologically, in a somewhat different initial location and morphologic appearance of collagen fibers.[1,2] The skin sclerosis in SC-GHVD might be considered a form of cutaneous fibrosis with features of excessive tissue repair related to an immunologic reaction between lymphocytes of the graft and tissue host cells.[3]

The updated treatment approaches in progressive cGVHD were recently summarized by Gazie[4] and Vogelsang[5]; agents like cyclosporine (CsA), corticosteroids, antilymphocyte globulin, mycophenolate mofetil, extracorporeal photopheresis, and monoclonal antibodies are recommended at the expense of unavoidable morbidity and mortality. Recent investigations have suggested that the pathogenesis of cGVHD is more similar clinically to an autoimmune disease than to acute GVHD.[6,7] Treatment of autoimmune diseases such as systemic lupus erythematosus, rheumatoid arthritis, systemic sclerosis, and so forth by autologous stem cell rescue and high-dose immunotherapy is a rapidly growing and encouraging approach that led us to use this strategy in a progressive SC-GVHD patient, who was a 29-year-old male, Ph$^+$ CML patient in first chronic phase.[8,9] Within 2 years of diagnosis, he underwent transplantation from his HLA-identical female sibling donor. After a successful engraftment, on day 1 after transplantation, the patient developed ichthyosis superimposed upon an early stage of de novo cGVHD. The patient was in complete chimeric status and in complete molecular remission. Chronic GVHD progressed, with complaints of edema of the skin on the extremities, xerophthalmia, xerostomia, and hepatic involvement, and the skin biopsy confirmed SC-GVHD. Dysphagia and dyspnea progressed despite administration of CsA, oral corticosteroids, and mycophenolate mofetil, and his performance status deteriorated, but without thrombocytopenia. After receiving a written consent, we mobilized the stem cells with cyclophosphamide (CY) and granulocyte colony-stimulating factor, an immunomagnetic positive selection was performed on Isolex 300i (Nexell, Irvine, CA), and 4.53×10^6/kg CD34$^+$ cells were reinfused after conditioning with CY (50 mg/kg/day intravenously for 4 days) and antithymocyte globulin (30 mg/kg/day intravenously for 3 days). The hematopoietic recovery was rapid, and no major transplantation-related complications were encountered. The improvement in the patient and resolution of cGVHD were monitored by joint flexibility index, measurement of skin thickness (by ultrasonography), skin biopsies, and quality of life. After a 15-month follow-up, the patient was still on low-dose prednisone but showed marked improvement in joint-movement indexes (50%-70% increase), skin thickness (20%-30% decrease), and quality of life (30%-40% increase). The improvement was more pronounced on the face and upper extremities than on the lower extremities. High-dose immunotherapy (HDIT) did not result in progression of his native disease or a change in complete donor chimeric status. The observation of marked improvement in our patient with life-threatening refractory SC-GVHD after HDIT with autologous peripheral blood stem cell (PBSC) rescue led us to comment about this approach in the light of the recently published review concerning therapy for cGVHD.[5] Although our patient showed a considerable improvement with HDIT and autologous stem cell support, the underlying mechanism needs to be elucidated. A possible indication and optimal timing of HDIT and autologous transplantation in extensive SC-GVHD should be further analyzed in the context of recent therapeutic options such as extracorporeal photoimmunotherapy, etretinate, thalidomide, and monoclonal antibodies against inflammatory cytokines.

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