



Successful Autologous Stem-Cell Transplantation Without the Use of Antithymocyte Globulin in a Patient with Refractory Systemic Juvenile Idiopathic Arthritis

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Received: 21 September 2021 / Accepted: 28 January 2022
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To the Editor: A 2-y-old female presents with a 2-mo history of quotidian fever, rash, lymphadenopathy, and arthritis. After excluding infections and malignancies, systemic juvenile idiopathic arthritis (sJIA) was diagnosed and treated with methotrexate and corticosteroids. Four weeks later, macrophage activation syndrome (MAS) appeared, thus methylprednisolone and tocilizumab (TCZ) were administered. Urticaria developed during TCZ infusions, progressing to anaphylaxis, and was, therefore, discontinued.

A reduced-intensity conditioning (RIC) regimen autologous stem-cell transplant (SCT) was considered. Based on a study in type 1 diabetes conducted by our group [1], stem cells were mobilized with cyclophosphamide (1.5 g/m²/d) for 2 d and granulocyte colony-stimulating factor (G-CSF) (10 mcg/kg/d) for 6 d. On day 10 after chemo-stimulation, 9 × 10⁶ CD34/kg were recovered by apheresis. RIC consisted of cyclophosphamide (500 mg/m²/d) and fludarabine (25 mg/m²/d) from day -4 to -1. Prophylaxis for MAS with cyclosporin A (4 mg/kg/d) and prednisolone (0.5 mg/kg/d) was administered between days -4 and +30.

Neutrophil engraftment was evident on day +13 and platelets were never below 20 × 10⁹/L. A single event of sepsis by *Stenotrophomonas* sp. developed on day +5. Transaminasemia presented on day +35, decreased gradually and became normal by day +142; imaging studies and virus workout were normal. Corticosteroids were tapered during a 4-mo period without sJIA

flare. Withdrawal of all medication was achieved by day +121 and the patient is in complete remission on day +742.

SCTs have risen as a potential therapy for sJIA but concerns of procedure-related mortality have limited its use [2]. RICs for SCT have been widely used in hematology showing faster engraftment, fewer infections, and less mortality [3]. The regimen presented here is low-cost (avoiding using antithymocyte globulin) and can be performed on an outpatient basis, contrasting with other reports on SCT in rheumatic diseases [2, 4]. This could be an effective treatment in refractory sJIA, especially in constrained-resource settings.

Declarations

Ethics Approval This report complies with the Declaration of Helsinki and follows institutional guidelines and procedures.

Conflict of Interest None.

References

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Publisher's Note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

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