Romiplostim for Thrombocytopenia Following Allogeneic Stem Cell Transplantation: A Case Series

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Introduction

- Thrombocytopenia is a relatively common complication following allogeneic hematopoietic stem cell transplantation
- It is associated with increased bleeding, transfusion requirements, chronic graft-versus-host disease and all-cause mortality
- Currently no approved treatments outside of supportive transfusions
- We report on the outcomes of 5 patients who received romiplostim for either primary engraftment failure or secondary failure of platelet recovery (SFPR)

Methods

- Retrospective case series of post-HSCT patients at our institution with either primary platelet engraftment failure or SFPR who were treated with romiplostim
- 5 patients identified
- Dose was 1mcg/kg, increased by 1mcg/kg per week at physician’s discretion
- Response to romiplostim and platelet recovery were defined as 7 consecutive days of platelet count > 50 x 10⁹/L with transfusion independence

Results

- 4 out of the 5 patients demonstrated a response to romiplostim
- Responses to romiplostim were sustained in the absence of significant bone marrow disease, which was found to contribute to recurrent thrombocytopenia
- Romiplostim was well-tolerated overall; one patient developed minimal fibrotic changes on bone marrow biopsy post-romiplostim

Table 1: Patient Characteristics and Response to Romiplostim

Patient	Age/Gender	Indication for Transplant	Donor Source/ Match	Primary Failure or SFPR	# RPM doses	Time to Response (days)	Duration of Response (days)	Complications
1	41/M	Ph+ B-ALL	dUCB: 4/6, 4/6	SFPR	16	42	22	No
2	39/M	Aplastic anemia	MRD, 10/10	Primary	17	n/a	n/a	No
3	41/F	AML, M5	dUCB: 4/6, 4/6	Primary	8	27	407 (ongoing)	Focal 0-1+ fibrosis on BMBx
4	39/M	B-ALL	dUCB: 5/6, 6/6	SFPR	7	14	104	No
5	35/F	B-ALL	dUCB: 4/6, 6/6	Primary	10	58	404	No

Discussion/ Conclusions

- Our series adds to the generally positive literature regarding romiplostim in this setting, as 4 out of the 5 patients demonstrated a platelet response
- Response was seen in both primary engraftment failure and SFPR; however romiplostim was not effective in the setting of significant bone marrow disease
- Although well-tolerated in this series, romiplostim needs to be evaluated in a randomized clinical trial in this setting to fully assess safety and efficacy