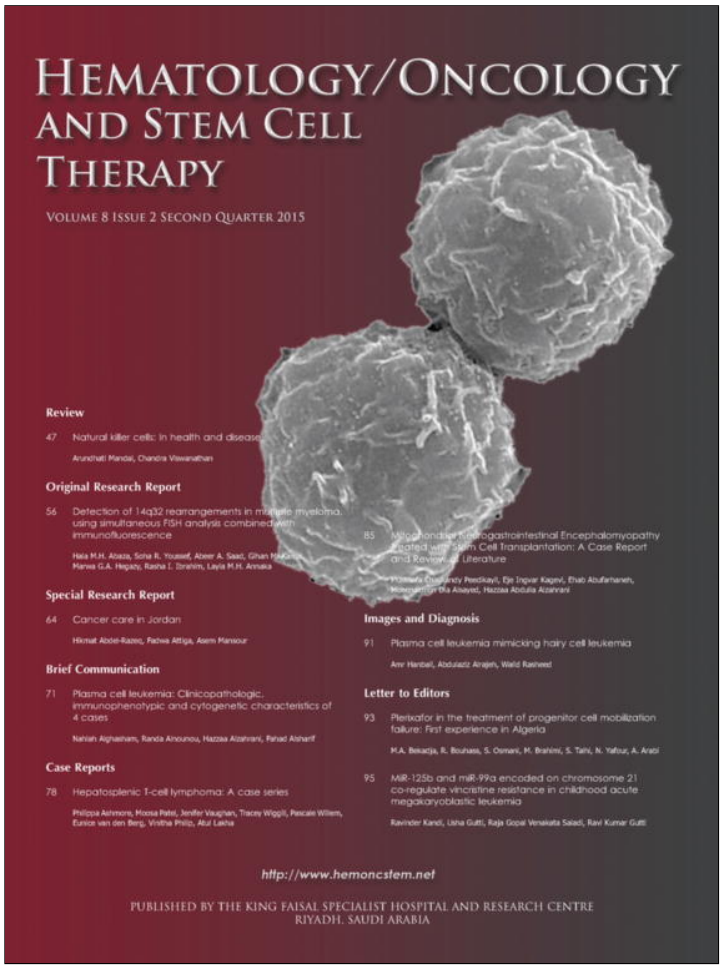

letter to editor

Plerixafor in the treatment of progenitor cell mobilization failure: First experience in Algeria

To the Editor: Autologous progenitor cell transplantation (APCT) after a high dose of conditioning chemotherapy is now an established treatment modality for many hematological malignancies. Clinical results and survival after APCT depend on disease chemosensitivity at transplant, efficacy of the conditioning regimen, and quantity of $CD34^+$ cells infused.[1]

Most autologous progenitor cell mobilization protocols use either a combination of chemotherapy and a growth factor,[2] or a growth factor alone.[3] Mobilization failure in patients is a major therapeutic concern which makes subsequent APCT impossible. A new growth factor called plerixafor,[4] developed by the pharmaceutical industry, is especially indicated for mobilization failure.

In this context, we report the first experience of the use of plerixafor for $CD34^+$ mobilization in Algeria.

A total of 221 autografts were performed at our center from May 2009–31 July 2014. The main indications for autograft were multiple myeloma (MM) (148 patients), Hodgkin's lymphoma (HL) (60 patients), and non-Hodgkin's lymphoma (NHL) (13 patients). The mobilization protocol involved subcutaneous G-CSF (filgrastim) alone at the dose of 15 µg/kg body weight/day for five days. Mobilization failure is declared when the number of $CD34^+$ is less than 2.10^6/kg body weight. Thirteen patients did not mobilize $CD34^+$. With patients experiencing mobilization failure, we used plerixafor at 0.24 mg/kg body weight combined with G-CSF. Harvesting took place six to ten hours after plerixafor injection.

Table 1 shows the clinical characteristics of the 13 patients, who had a median age of 46 years (24–64), were predominantly female (10 W/3 M) and had a median of three treatment lines. Ten patients received a single plerixafor injection, and three patients received one injection per day for two days. Mean $CD34^+$ count with G-CSF alone was 0.76×10^6/kg, and with plerixafor was 3.26×10^6/kg ($p = 0.014$). Among the 13 patients who received plerixafor, nine patients received intensification with APCT, with a median $CD34^+$ concentration of 2.34×10^6/kg. Engraftment was complete in these nine patients over a 13-day engraftment period. Four patients did not mobilize with plerixafor.

Mobilization failure during APCT is a major concern in the therapeutic management of patients with hematological malignancies. In our series of 13 patients, mobilization failure with

Table 1. Patient characteristics.

N° patient	Age	Gender	Diagnosis	Line treatment	Number of apheresis	Mobilization results
1	49	F	NHL	R-CHOP/DHAP/ICE	3	Successful
2	59	M	NHL	R-CHOP/R-DHAP/ICE	2	Successful
3	26	F	NHL	CHOP/DHAP/ESHAP	3	Failed
4	52	F	MM	VAD/CTD/VCD	3	Failed
5	60	F	MM	VAD/VCD/VTD	2	Successful
6	56	F	MM	CTD/VCD	2	Successful
7	50	F	NHL	CHOP/DHAP/ESHAP	2	Successful
8	24	F	HL	ABVD/DHAP	3	Successful
9	28	F	HL	ABVD/BEACOPP/DHAP	2	Successful
10	33	F	HL	ABVD/BEACOPP/DHAP	2	Failed
11	46	F	HL	ABVD/BEACOPP/ESHAP	3	Successful
12	27	M	HL	ABVD/BEACOPP/ESHAP	2	Failed
13	43	M	HL	ABVD/DHAP/ESHAP	3	Successful

plerixafor affected patients with lymphoma (n = 3) and one patient with MM on a multiple therapy regimen.

Plerixafor enabled us to increase $CD34^+$ count four fold and to salvage almost 70% of cases of primary mobilization failure with a single injection for most patients (n = 8) and two injections for one patient.

In conclusion, our experience in the use of plerixafor enabled us to show effectiveness in autologous progenitor cell mobilization with a salvage rate of almost 70%.

CONFLICT OF INTEREST DECLARATION

The authors have no conflict of interest to declare.

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REFERENCES

1. Milpied N. The role of myeloablation for lymphoma. N Engl J Med 2014;370(6):576.
2. Mohty M, Hübel K, Kröger N, Aljurf M, Apperley J, Basak GW, et al.. Autologous haematopoietic stem cell mobilisation in multiple myeloma and lymphoma patients: a position statement from the European Group for Blood and Marrow Transplantation. Bone Marrow Transplant 2014;49(7):865–72.
3. Talhi S, Osmani S, Brahimi M, Yafour N, Bouhass R, Arabi A, et al.. The use of granulocyte colony stimulating factoR (G-CSF) (filgrastim) alone in the mobilization of stem cell in the autologous stem cell transplantation. Transfus Apher Sci 2013;49(1):97–9.
4. Uy GL, Rettig MP, Cashen AF. Plerixafor, a CXCR4 antagonist for the mobilization of hematopoietic stem cells. Expert Opin Biol Ther 2008;8(11):1797–804.