

# Letter to the Editor

Anti-Cancer Drugs 2010, 21:469

## Predonor lymphocyte infusion treatment with 5-azacytidine as salvage treatment in relapsed acute myeloid leukaemia secondary to myelodysplastic syndrome

Luis Vilella<sup>a</sup>, Viki Anders<sup>b</sup> and Javier Bolaños-Meade<sup>b</sup>, <sup>a</sup>Centro de Innovación y Transferencia en Salud, Escuela de Medicina 'Ignacio A. Santos' del Instituto Tecnológico y de Estudios Superiores de Monterrey and Hospital San José-Tecnológico de Monterrey, Mexico and <sup>b</sup>Johns Hopkins University School of Medicine and the Sidney Kimmel Comprehensive Cancer Center at Johns Hopkins, Baltimore, Maryland, USA

Correspondence to Dr Javier Bolaños-Meade, MD, Sidney Kimmel Comprehensive Cancer Center at Johns Hopkins, 1650 Orleans, CRB-I 2M87, Baltimore, MD 21231, USA

Tel: +1 410 614 6398; fax: +1 410 955 1969; e-mail: fbolano2@jhmi.edu

Received 2 November 2009 Revised form accepted 25 November 2009

A 46-year-old Caucasian woman presented with acute myeloid leukaemia (AML) evolving from a myelodysplastic syndrome (MDS) with a complex karyotype [51,XX,+X,+13,+14,+21,+22(17)/46,XX(5) November 1996 and 51,XX,+X,-7,+13,+14,+21,+21,+22(17)/46,XX(3) January 1997] and received induction treatment without response; thus, she received an unrelated allogeneic bone marrow transplant in 1997 for her primary refractory AML. She achieved a complete remission. Eleven years later, in July 2008, her complete blood count showed leukopenia (2200 cells/mm<sup>3</sup>; absolute neutrophils 440), normocytic normochromic anaemia (haemoglobin 9.3 g/dl) and slight thrombocytopenia (139 000/mm<sup>3</sup>). Bone marrow biopsy/aspirate was hypocellular with 20–30% blasts, and chromosomal analysis showed 50,XX,+X,add(2)(q37),7,del(7)(q?22),del(9)(q13q32),+13,+14,+21,+22(11)/46,XX(9). She was a mixed chimera. It was decided to proceed with donor lymphocyte infusion (DLI) from the same unrelated donor after therapy with 5-azacytidine, given her history of insensitivity to chemotherapy. The patient received 75 mg/m<sup>2</sup>/day for 7 days by subcutaneous injection for five cycles and achieved complete remission. A bone marrow biopsy and aspirate obtained 5 days before

DLI showed normal trilineage haematopoiesis without evidence of leukaemia. DLI was given afterwards without complications. One month after the DLI, the patient had normal blood counts [white blood cells 5300 (absolute neutrophil count 2364); haemoglobin 10 g/dl; platelet count 243 000] without acute graft-versus-host disease. She developed chronic graft-versus-host disease later characterized by dry eyes and mouth as well as lichenoid skin changes requiring steroid therapy. Four months after the DLI, she had a normal bone marrow examination with a normal male karyotype (donor) and fluorescence in-situ hybridization, and her chimerism studies showed 100% donor DNA.

At this time, the hypomethylating drug, 5-azacytidine, is approved and used as part of treatment in MDS after which 23% complete or partial responses are observed [1]. The use of 5-azacytidine before allogeneic stem cell transplantation has shown encouraging results [2], but data after relapse and before DLI are lacking, as in this case in which the drug was able to induce a remission before DLI. Our case is interesting because there is virtually no information about using 5-azacytidine before DLI. The use of DLI alone will produce very limited clinical benefits (remission around 15%) [3], but the combination of a hypomethylating drug and DLI deserves further investigation in MDS patients.

## References

- 1 Silverman LR, Demakos EP, Peterson BL, Kornblith AB, Holland JC, Odchimar-Reissig R, *et al.* Randomized controlled trial of azacitidine in patients with the myelodysplastic syndrome: a study of the Cancer and Leukemia Group B. *J Clin Oncol* 2002; **20**:2429–2440.
- 2 Field T, Perkins J, Huang Y. 5-Azacitidine for myelodysplasia before allogeneic hematopoietic cell transplantation. *Bone Marrow Transplant* 2009; doi: 10.1038/bmt.2009.134.
- 3 Schmid C, Labopin M, Nagler A, Bornhäuser M, Finke J, Fassas A, *et al.* Donor lymphocyte infusion in the treatment of first hematological relapse after allogeneic stem-cell transplantation in adults with acute myeloid leukemia: a retrospective risk factors analysis and comparison with other strategies by the EBMT Acute Leukemia Working Party. *J Clin Oncol* 2007; **25**:4938–4945.