

Peripheral CD5+ CD10+ B-cell proliferation with atypical morphology attributable to human herpesvirus 6 infection following umbilical cord blood transplantation

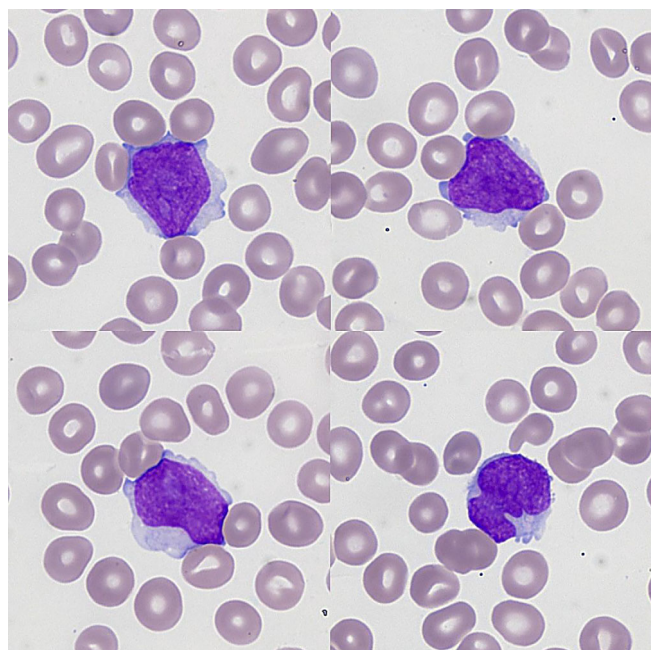
Alban Canali¹ | Jean-Baptiste Rieu¹ | Barbara J. Bain²

¹Haematology Laboratory, Cancer University Institute of Toulouse – Oncopole, Toulouse, France

²Centre for Haematology, St Mary's Hospital Campus of Imperial College Faculty of Medicine, St Mary's Hospital, London, UK

Correspondence

Barbara J. Bain, Department of Blood Sciences, St Mary's Hospital, Praed Street, London W2 1NY, UK.
Email: b.bain@imperial.ac.uk



A 21-year-old man was under follow-up after a second hematopoietic stem cell transplant with umbilical cord blood (UCBT) for relapsed acute myeloid leukemia. One month after UCBT, he was in complete remission with incomplete count recovery (CRi, hemoglobin concentration 85 g/L, platelets $13 \times 10^9/L$, and neutrophils $1.2 \times 10^9/L$). Donor chimerism was 100%. Eleven days later, a sudden

increase in the lymphocyte count from 0.5 to $2.1 \times 10^9/L$ was observed concomitantly with human herpesvirus 6 (HHV6) reactivation with a peripheral blood viral load at log 3.32 copies/mL. Examination of the blood film revealed 41% large atypical lymphocytes with a high nucleocytoplasmic ratio, irregular nucleus, decondensed chromatin with indistinct nucleoli, and weakly basophilic cytoplasm with irregular protrusions (images May-Grünwald-Giemsa, $\times 100$ objective). Flow cytometric immunophenotyping showed polyclonal CD19+ B cells (87% of lymphocytes) with a particular CD5+ CD10+ CD24+ CD38+ CD27- profile indicative of regulatory B-cell (Breg) proliferation. The absence of CD27 in this population showed that it was probably derived from the UCBT.¹ Since the general condition of the patient was good (WHO performance status 1) and physical examination was normal, no antiviral treatment was required. One hundred days after UCBT, he was still in CRi but with an improvement in the platelet count ($46 \times 10^9/L$). Breg lymphocytosis was still present and was fluctuating as was the HHV6 viral load.

HHV6 infection is well documented in adult patients following UCBT.² A higher prevalence of Breg in human cord blood compared to peripheral adult blood has also been demonstrated.¹ Here we describe the cytological and immunophenotypic features of Breg lymphocytes in the peripheral blood of an adult patient with HHV6 infection following UCBT. It is important that these reactive cells are not confused with neoplastic cells.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

This is an open access article under the terms of the [Creative Commons Attribution-NonCommercial-NoDerivs](https://creativecommons.org/licenses/by-nc-nd/4.0/) License, which permits use and distribution in any medium, provided the original work is properly cited, the use is non-commercial and no modifications or adaptations are made.

© 2022 The Authors. *American Journal of Hematology* published by Wiley Periodicals LLC.

ORCID

Alban Canali  <https://orcid.org/0000-0002-1609-3307>

Jean-Baptiste Rieu  <https://orcid.org/0000-0002-0950-979X>

Barbara J. Bain  <https://orcid.org/0000-0003-3077-4579>

REFERENCES

1. Esteve-Solé A, Teixidó I, Deyà-Martínez A, et al. Characterization of the highly prevalent regulatory CD24^{hi}CD38^{hi} B-cell population in human cord blood. *Front Immunol*. 2017;8:201.
2. Chevallier P, Hebia-Fellah I, Planche L, et al. Human herpes virus 6 infection is a hallmark of cord blood transplant in adults and may participate

to delayed engraftment: a comparison with matched unrelated donors as stem cell source. *Bone Marrow Transplant*. 2010;45:1204-1211.

How to cite this article: Canali A, Rieu J-B, Bain BJ. Peripheral CD5+ CD10+ B-cell proliferation with atypical morphology attributable to human herpesvirus 6 infection following umbilical cord blood transplantation. *Am J Hematol*. 2022; 97(11):1489-1490. doi:[10.1002/ajh.26655](https://doi.org/10.1002/ajh.26655)