To our knowledge, this is the first report of a blaVIM gene in Australia. blaIMP-4-carrying Gram-negative organisms have led to a significant outbreak in our geographic region, but the introduction of a second MBL type is a matter of concern. The finding of a blaOXA-58-carrying A. baumannii is of interest, as this gene has only recently been reported from an ICU in Athens, Greece. This case highlights the importance of international travel in the spread of antimicrobial resistance. The global emergence of carbapenemase genes is worrying and we believe that consideration should be given to isolating and screening all patients admitted to hospital from a foreign country for multidrug-resistant pathogens.

Acknowledgements

We would like to thank the physicians who cared for the patient and the microbiology staff at the Royal Melbourne Hospital for their processing of the specimen.

Transparency declarations

None to declare.

References


Journal of Antimicrobial Chemotherapy
doi:10.1093/jac/dkl038
Advance Access publication 13 February 2006

Delayed myeloid engraftment due to vancomycin in allogeneic haematopoietic stem cell transplant recipients

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Keywords: cytopenia, antibiotics, neutropenia

Sir,

In haematopoietic transplantation, myeloid and megakaryocytic engraftment typically occurs in tandem at a median of 15 days (range = 5–41 days). Various factors, including the age of the recipient, stem cell dose (CD34+ cells), source of stem cells (bone marrow versus mobilized blood stem cells), degree of HLA matching, administration of colony stimulating factors, T cell depletion and infections, are known to affect the process of engraftment. Vancomycin is commonly used during the course of haematopoietic transplantation. Although vancomycin-induced neutropenia has been reported, in the presence of other confounding factors such as infection, sepsis and other antibiotics, a direct causal relationship may be difficult to establish. We herein report a case of rapid megakaryocytic engraftment with normalization of platelet counts in the absence of myeloid engraftment and restoration of myeloid haematopoiesis following discontinuation of vancomycin.

A 59-year-old male received a non-myeloablative allogeneic haematopoietic stem cell transplant (allo-SCT) for intermediate risk (normal cytogenetics) acute myelogenous leukaemia (AML-M4) in first complete remission (CR1) from a 6/6 HLA-matched unrelated donor. A total of 6.1 × 106 CD34+ cells were infused following sub-ablative conditioning (busulfan 0.8 mg/kg every 6 h × 2 days, fludarabine 30 mg/m2 × 3 days and alemtuzumab 10 mg × 5 days). Graft versus host disease (GVHD) prophylaxis was performed with a short course of methotrexate (10 mg/m2 on day +1; 5 mg/m2 on day +3; and 5 mg/m2 on day +6) and tacrolimus. The transplant course was uncomplicated except for a catheter-insertion-site infection on day +12, for which intravenous vancomycin (1 g every 12 h) was initiated. The peak and trough vancomycin levels were 27.1 mg/L (range = 30.0–40.0 mg/L) and 8.4 mg/L (range = 5.0–10.0 mg/L), respectively. The patient remained afebrile, blood cultures were negative and he did not receive any other antibiotic. Figure 1 demonstrates the neutrophil and platelet nadir along with the haematopoietic reconstitution. Megakaryocytic engraftment (platelets ≥20,000/µL × 3 consecutive days in the absence of transfusion) occurred on day +10 without myeloid engraftment. On day +18 colony stimulating factor (G-CSF; 480 µg subcutaneously daily) was initiated. On day +19 the platelet count was 160,000/µL without any evidence of myeloid engraftment (neutrophils = 2, WBC = 100/µL). On day +21, vancomycin was discontinued; myeloid engraftment occurred on day +23 (13 days after megakaryocytic engraftment). An absolute lymphocyte count (ALC) at myeloid engraftment was 18 cells/µm3. Lymphocyte recovery (ALC ≥ 500 cells/µm3) occurred in 70 days. Engraftment studies on day 30 confirmed 99.5% donor chimerism. Pre-emptive ganciclovir was initiated for cytomegalovirus (CMV) antigenemia
on day 21; the patient had no CMV disease. Currently, at 6 months post-transplantation, he has no evidence of GVHD.

Megakaryocytic engraftment on day +10 and complete platelet recovery (platelets >150,000/dL) by day +19 in the absence of myeloid engraftment provides evidence supporting the occurrence of granulocytopenia associated with vancomycin therapy. A previous report had described vancomycin-associated granulocytopenia after successful engraftment following an auto-transplant. A bone marrow specimen obtained at the time of neutropenia demonstrated in vitro suppression of progenitor cell growth at increasing concentrations of vancomycin. The patient represents the first published case of vancomycin-associated failed myeloid engraftment.

Transparency declarations

None to declare.

References


