Serial Granulocyte Transfusions as a Treatment for Sepsis Due to Multidrug-Resistant *Pseudomonas aeruginosa* in a Neutropenic Patient

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**CASE REPORT**

An 11-year-old girl with acute myeloid leukemia achieved complete remission after a course of induction antileukemic chemotherapy and relapsed during courses of the consolidation therapies. She was treated with allogeneic bone marrow transplantation from her brother, whose human leukocyte antigens (HLA) were fully matched. She relapsed again on day 150 after bone marrow transplantation and failed to achieve complete remission. Subsequently, she suffered from sepsis and cellulitis of the labia majora caused by multidrug-resistant *Pseudomonas aeruginosa* (MRPA). Antibiotic susceptibility tests revealed that the bacteria were resistant to piperacillin (MIC, $\geq 128$ mg/liter), ceftazidime (MIC, $\geq 128$ mg/liter), cefazolin (MIC, $\geq 32$ mg/liter), aztreonam (MIC, 16 mg/liter), ciprofloxacin (MIC, $\geq 64$ mg/liter), gentamicin (MIC, $\geq 64$ mg/liter), imipenem (MIC, 16 mg/liter), and meropenem (MIC, 16 mg/liter). The bacteria were, however, sensitive to amikacin (64 mg/liter), imipenem (MIC, 16 mg/liter), and meropenem (MIC, 16 mg/liter). The emergence of multidrug-resistant *Pseudomonas aeruginosa* (MRPA) has become a major clinical problem. We successfully treated MRPA sepsis in a neutropenic patient undergoing peripheral blood stem cell transplantation with serial granulocyte transfusions. Granulocyte transfusion should be considered as a treatment for severe infection in patients with neutropenia.

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ity of donor recruitment, screening, and care is also prohibitive as part of routine treatment for the infected patients with neutropenia. In addition, before the widespread clinical use of G-CSF, GT had a limited role in the treatment of infections because of the inadequate dose of granulocytes. However, the use of a combination of G-CSF and dexamethasone to mobilize granulocytes resulted in a sufficient yield of granulocytes (1, 7). The efficacy of GT and the availability of G-CSF allow us to consider the feasibility of using GT for severe infection in patients with prolonged neutropenia (4, 5, 9).

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REFERENCES