SUCCESSFUL MOBILIZATION WITH PLERIXAFOR PLUS GRANULOCYTE COLONY-STIMULATING FACTOR IN PEDIATRIC PATIENTS
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Background: Collection of sufficient hematopoietic stem cells is required for autologous hematopoietic stem-cell transplantation (ASCT) after high-dose chemotherapy. This study evaluated the clinical efficacy and tolerability of plerixafor, a CXCR4 receptor antagonist, in pediatric patients.

Methods: We retrospectively reviewed 13 patients (7 males, 6 females) who received plerixafor plus granulocyte colony-stimulating factor (G-CSF) for hematopoietic stem cell mobilization at Seoul National University Children’s Hospital. Results: We used plerixafor plus G-CSF in patients who previously failed peripheral blood stem cell mobilization by chemotherapy and G-CSF. All patients received G-CSF (10 μg/kg) for 4 days, without prior chemotherapy. Then plerixafor (240 μg/kg) and G-CSF (10 μg/kg) were administered subcutaneously, at 10 and 2 hours before each apheresis. All 13 patients were mobilized successfully, and the median number of CD34+ cells were 9.54 (range 3.17-28.97) x 10^6/kg after 1 to 3 cycles of apheresis without serious complications. Twelve ASCTs were performed and 1 patient is planning to have ASCT. Ten patients achieved neutrophil engraftment at median 12 days (10-13 days) after ASCT. Platelet engraftment was achieved at median 18 days (14-231 days) in 9 patients and 1 patient who is now at 22nd day of ASCT is waiting for the platelet engraftment. Two patients showed treatment-related mortality before engraftment. Conclusion: Our study suggests that the mobilization with plerixafor and G-CSF could improve the success rate of peripheral stem cell mobilization in pediatric patients.