



Original article

Analysis of the feasibility of early hospital discharge after autologous hematopoietic stem cell transplantation and the implications to nursing care



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ABSTRACT

Introduction: Autologous hematopoietic stem cell transplantation is a conduct used to treat some hematologic diseases and to consolidate the treatment of others. In the field of nursing, the few published scientific studies on nursing care and early hospital discharge of transplant patients are deficient. Knowledge about the diseases treated using hematopoietic stem cell transplantation, providing guidance to patients and caregivers and patient monitoring are important nursing activities in this process. Guidance may contribute to long-term goals through patients' short-term needs.

Aim: To analyze the results of early hospital discharge on the treatment of patients submitted to autologous transplantation and the influence of nursing care on this conduct.

Methods: A retrospective, quantitative, descriptive and transversal study was conducted. The hospital records of 112 consecutive patients submitted to autologous transplantation in the period from January to December 2009 were revisited. Of these, 12 patients, who remained in hospital for more than ten days after transplantation, were excluded from the study.

Results: The medical records of 100 patients with a median age of 48.5 years (19–69 years) were analyzed. All patients were mobilized and hematopoietic stem cells were collected by leukapheresis. The most common conditioning regimes were BU12Mel100 and BEAM 400. Toxicity during conditioning was easily managed in the outpatient clinic. Gastrointestinal toxicity, mostly Grades I and II, was seen in 69% of the patients, 62% of patients had diarrhea, 61% of the patients had nausea and vomiting and 58% had Grade I and II mucositis.

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Ten patients required hospitalization due to the conditioning regimen. Febrile neutropenia was seen in 58% of patients. Two patients died before Day +60 due to infections, one with aplasia. The median times to granulocyte and platelet engraftment were 12 days and 15 days, respectively, with median red blood cell and platelet transfusions until discharge of three and four units, respectively. Twenty-three patients required rehospitalization before being discharged from the outpatient clinic.

Conclusion: The median time to granulocyte engraftment was 12 days and during the aplasia phase few patients were hospitalized or suffered infections. The toxicity of the conditioning was the leading cause of rehospitalization. The nursing staff participated by providing guidance to patients and during the mobilization, transplant and outpatient follow-up phases, thus helping to successfully manage toxicity.

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Introduction

Autologous hematopoietic stem cell transplantation (aHSCT) is a conduct used to treat some hematologic diseases and to consolidate the treatment of other diseases.¹⁻³ The increased demand for transplants has required the creation of some models. Early hospital discharge is a strategy in which the patient leaves the hospital after the conditioning regimen and hematopoietic stem cell (HSC) infusion with treatment being continued under outpatient conditions.^{2,4} Although outpatient hematopoietic stem cell transplantation (HSCT) models are well defined, there is a paucity of studies and scientific publications. In the field of nursing, the limited number of scientific studies related to nursing care and early hospital discharge of transplant patients are deficient. Knowledge about the diseases treated using HSCT, providing guidance to patients and caregivers and patient monitoring are important nursing activities in this process. The guidance provided to patients may contribute to long-term goals through their short-term needs. The objectives of this study were to analyze the results of early hospital discharge as a viable alternative in the treatment of patients submitted to aHSCT and the influence of nursing care on this conduct. The patient compliance contributes to the achievement of goals in the long term by the need for short-term.⁵⁻⁷

Methods

This was a retrospective, quantitative, descriptive and transversal study. The records of 112 consecutive patients submitted to aHSCT in the Hospital das Clínicas da Faculdade de Medicina da Universidade de São Paulo (HC-FMUSP) during the period from January 5, 2009 to December 7, 2009 were evaluated for inclusion in this study. The inclusion criteria were patients who were discharged from hospital within the first ten days after HSCT (D + 10), age between 18 and 70 years and continued to be treated in the outpatient clinic until discharge. Of the 112 patients considered for this study, 100 met the inclusion criteria: 45 patients with multiple myeloma (MM), 21 patients with Hodgkin's lymphoma (HL), 25 patients with non-Hodgkin lymphoma (NHL) and nine patients with a

diagnosis of acute myelogenous leukemia (AML). The 12 remaining patients were not discharged from hospital before D + 10 and were therefore excluded. The data collected covered the procedure from the mobilization phase until outpatient discharge.

Conditioning regimen-related toxicities were graded using the World Health Organization toxicity scale adapted for the service by Nicolau.⁸ The occurrence of infections was evaluated from the admission of the patient in the outpatient clinic until D + 30. Some protocols were followed from admission to outpatient care, including the collection of samples for culturing in order to identify infections early. Patients with positive results were treated.

Statistical analysis

Descriptive statistics were employed to analyze the variables using absolute numbers, means and percentages of each of the proposed outcomes.

Results

The characteristics of enrolled patients and the results of the HSCT are shown in [Table 1](#). The mobilization of HSC to the peripheral blood was achieved using cyclophosphamide (120 mg/kg weight) and granulocyte colony-stimulating factor (G-CSF – 10 to 20 mcg/kg weight) in 85 (85%) patients. G-CSF alone was used for mobilization in 10 patients, eight of whom had multiple myeloma in complete response and two had acute myelogenous leukemia. A regimen of cyclophosphamide (120 mg/kg weight), gemcitabine (2 g/m²) and G-CSF (10–20 mcg/kg weight) was used for five patients, three patients with Hodgkin's lymphoma and two with non-Hodgkin lymphoma. All patients included in this study collected the HSC through a central venous catheter (CVC) by leukapheresis until the required number of CD34⁺ cells for HSCT was obtained.

In this sample 9/36 (25%) episodes of hospitalization, resulting from the toxicity of the conditioning regimen were observed. Grade II and III diarrhea was the most frequent symptom of toxicity in 27/36 (75%) patients.

Febrile neutropenia was seen in 58% of the patients before bone marrow engraftment. Of the 100 patients analyzed, 11

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