Risk Analysis of Falls in Patients Undergoing Allogeneic Hematopoietic Stem Cell Transplantation

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To identify fall risks in patients undergoing hematopoietic stem cell transplantation (HSCT), the authors reviewed retrospective data on inpatients from April 2010 to March 2011. Among 77 HSCT patient records reviewed, the authors found that 35 patients had experienced at least one fall, including near-miss episodes (fallers). The main location of the falls was a corridor, and the main activity at the time of the fall was going to the toilet. To investigate fall risks along the HSCT time trajectory, the authors divided the time into pre- and postengraftment periods and investigated the unique characteristics of each.

March 2011. Information on the following variables was extracted from each patient’s medical chart: (a) age and gender, (b) fall incident, (c) location and circumstances surrounding each incident, (d) date of the fall and medications used at that time, (e) time of the fall, (f) cause of the fall, (g) score on the Functional Independence Measure (FIM) (Forrest et al., 2012; Kwan, Kaplan, Hudson-McKinney, Redman-Bentley, & Rosario, 2012), (h) patient’s response to the fall, and (i) result of the Picture-Frustration (P-F) Study (Rosenzweig, 1945). The study was approved by the institutional review board of the Hyogo College of Medicine.

Functional Independence Measure Score

The FIM measures cognitive function, ability to communicate, mobility, and self-care skills (Forrest et al., 2012; Kwan et al., 2012). Some studies have identified a positive association between the FIM score and risk of falls (Saverino, Benevolo, Ottone, Zsirai, & Sessarego, 2006; Teasell, McRae, Foley, & Bhardwaj 2002; Zdobysz, Boradia, Ennis, & Miller, 2005). In the authors’ institution, FIM scores are assessed weekly by physiotherapists during the period of admission. The FIM score of fallers was defined as the score of the day or nearest to the day of the fall. The FIM scores of nonfallers in the pre- and postengraftment periods were represented by the minimum score in each period. Two or more incidents of falls in the same patients were counted as separate episodes.

Methods

Medical Chart-Based Review

The retrospective study involved 77 patients who underwent an allogeneic HSCT on the HSCT unit at Hyogo College of Medicine in Japan from April 2010 to March 2011. Information on the following variables was extracted from each patient’s medical chart: (a) age and gender, (b) fall incident, (c) location and circumstances surrounding each incident, (d) date of the fall and medications used at that time, (e) time of the fall, (f) cause of the fall, (g) score on the Functional Independence Measure (FIM) (Forrest et al., 2012; Kwan, Kaplan, Hudson-McKinney, Redman-Bentley, & Rosario, 2012), (h) patient’s response to the fall, and (i) result of the Picture-Frustration (P-F) Study (Rosenzweig, 1945). The study was approved by the institutional review board of the Hyogo College of Medicine.

Picture-Frustration Study

The P-F Study was originally designed to measure reactive aggressive behavior