

# Autologous Stem Cell Transplantation

## The predictive value of the Morse Fall Scale in hospitalized patients

Vivian Dee, MSN, APRN-BC, Juan Toro, MD, MSCI, Shuko Lee, MS, Paula Sherwood, RN, PhD, CNRN, FAAN, and David Haile, MD

**BACKGROUND:** Falls are common in hospitalized patients undergoing autologous stem cell transplantation (ASCT). Research demonstrates that preventing patient falls requires knowledge of the risk factors and the circumstances preceding the patient's fall.

**OBJECTIVES:** To identify risk factors related to falls in recipients of ASCT and assess the predictive value of the Morse Fall Scale (MFS).

**METHODS:** Of the 288 patients who underwent transplantation during the study period, 14 were fallers. Twenty controls were randomly selected. The study used descriptive case-control analysis and simple logistic regression to analyze the data.

**FINDINGS:** Eight fallers and four non-fallers had high MFS scores. The logistic regression model indicated that patients with high MFS scores were 5.3 times more likely to fall and that for each day patients experienced diarrhea, their risk of fall increased 1.2 times.

### KEYWORDS

autologous stem cell transplantation;  
fall risk factors; slip; Morse Fall Scale

### DIGITAL OBJECT IDENTIFIER

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**THE INSTITUTE OF MEDICINE REPORT** *To Err Is Human: Building a Safer Health System*, released in 2000, depicted the preventable adverse events of care that patients experienced in the United States, and one year later, *Crossing the Quality Chasm: A New Health System for the 21st Century* reported six dimensions that the healthcare industry needs to embrace to improve the U.S. healthcare system. The latter report stressed that care should be safe, effective, efficient, timely, patient-centered, and equitable (Berwick, 2002).

In response to these findings of inefficiency and ineffectiveness, the U.S. government enacted the Section 5001(c) of Deficit Reduction Act of 2005, which identified 14 hospital-acquired adverse conditions (including falls) that could have been prevented with the use of evidence-based guidelines. This prompted the Centers for Medicare and Medicaid Services (CMS) to implement payment changes to healthcare organizations designed to encourage fall prevention; in 2008, CMS discontinued fall-related reimbursement (CMS, 2015).

### Patient Falls

Fall-related injuries during hospitalization may lengthen a patient's stay, and falls may be a burden in terms of reduced quality of life and increased healthcare costs (Nassar, Helou, & Madi, 2014). A systematic review by Heinrich, Rapp, Rissmann, Becker, and König (2010) found that fall-related expenses in the United States were higher per patient per year (2,073 U.S. dollars [USD] per purchasing power parities [PPP]) than in Finland (1,059 USD per PPP) or Sweden (1,608 USD per PPP). Clinically, nurses play a significant role in preventing falls and improving patient safety. Patient falls are a nursing performance indicator, as listed by the National Database of Nursing Quality Indicators (n.d.), a quality improvement program that measures improvement efforts of nursing care in relation to patient outcomes. However, studies on falls often take place in general settings, and the results of these studies reflect the variations in fall cause by setting (see Table 1).

The chemotherapy drugs that patients receive following a diagnosis of cancer may compound other fall risk factors. Spoelstra et al. (2013) reported a