Management of Steroid-Induced Hyperglycemia in Hospitalized Patients With Cancer: A Review

Veronica J. Brady, RN, MSN, FNP-BC, BC-ADM, CDE, Deanna Grimes, DrPH, RN, FAAN, Terri Armstrong, PhD, APRN, FAAN, FANP, and Geri LoBiondo-Wood, PhD, RN, FAAN

Glucocorticoids are prescribed for hospitalized patients with cancer for a variety of reasons, including cerebral edema, nausea prevention, and as part of a cancer treatment regimen. Glucocorticoids are known to cause hyperglycemia. Hyperglycemia (steroid-induced or otherwise) among noncritically ill hospitalized patients has been shown to lead to increased length of hospital stay, delayed wound healing, increased infections, and higher mortality rates (Lleva & Inzucchi, 2011), which suggests the need for improved management strategies. The purpose of this review was to integrate the published research on the management and the effects of management of steroid-induced hyperglycemia among hospitalized adult patients with cancer with or without preexisting diabetes.

Background

Inpatient hyperglycemia, which occurs in 32%–38% of hospitalized patients, is defined as having blood glucose values greater than 140 mg/dl during hospitalization (Moghissi et al., 2009; Smiley & Umpierrez, 2010; Umpierrez et al., 2012). This elevated glucose level can occur for various reasons, including omission of antidiabetic agents in patients with known diabetes, stress hyperglycemia as a result of acute illness, and steroid-induced hyperglycemia (American Diabetes Association [ADA], 2013). Regardless of the underlying cause, hyperglycemia in hospitalized patients (with or without diabetes) has been associated with poor outcome (Moghissi et al., 2009). On the basis of the reported incidence of hyperglycemia among hospitalized patients, the ADA’s (2011) Clinical Practice Recommendations suggested that all patients with known diabetes and/or those receiving medications associated with hyperglycemia receive glucose monitoring during hospitalization in conjunction with meals or at meal times or every four to six hours if not eating. In 2013, the ADA further recommended that glucose monitoring be conducted in patients without laboratory results and assess for hyperglycemia in patients with or without diabetes.

Implications for Practice: Nurses should be aware of the effect that steroids have on glycemic control in patients and should be empowered to request or perform blood glucose monitoring when appropriate. Nurses can identify those patients receiving steroids and assess for signs and symptoms of hyperglycemia. They also can review routine laboratory results and assess for hyperglycemia in patients receiving steroids.

Key Words: hospitalized patients; cancer; steroids