Symptoms, Cytokines, and Quality of Life in Patients Diagnosed With Chronic Graft-Versus-Host Disease Following Allogeneic Hematopoietic Stem Cell Transplantation

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Purpose/Objectives: To describe associations among symptoms, cytokines, and quality of life (QOL) of patients with chronic graft-versus-host disease (cGVHD).

Design: Prospective, cross-sectional, cohort.

Setting: The bone marrow transplantation unit at a National Cancer Institute–designated cancer center in Virginia.

Sample: 24 adults diagnosed with cGVHD.

Methods: Data were collected for demographic factors, symptoms, and QOL from medical record and validated questionnaires. Serum was analyzed for cytokine levels.

Main Research Variables: cGVHD, symptoms, cytokines, C-reactive protein, and QOL.

Findings: Participants reported multiple, concurrent symptoms. Cytokine levels were higher in participants with symptoms versus those without symptoms. Cytokine interleukin-6 correlated with lack of energy and dry mouth. Negative correlations were noted between QOL and symptoms.

Conclusions: Findings demonstrated multiple concurrent symptoms present in this sample and significant relationships among symptoms, cytokines, and QOL.

Implications for Nursing: cGVHD is a serious condition affecting QOL in many individuals after bone marrow transplantation for many different cancers. Results from this pilot study indicate that patients experience multiple symptoms, including sexual dysfunction, that adversely affect QOL. Better understanding of the interrelated symptoms of cGVHD and the biomarkers associated with these symptoms may lead to targeted symptom management interventions.

Key Words: chronic graft-versus-host disease; symptoms; cytokines; inflammation; C-reactive protein; quality of life; cancer; bone marrow transplantation

ONF, 42(3), 265–275. doi: 10.1188/15.ONF.265-275

Hematopoietic cell transplantation (HCT) is the only curative therapy for many patients with hematologic, metabolic, and immunologic disorders. The number and efficacy of transplantations has increased. The goal of HCT is to cure the underlying disease by replacing destroyed, unhealthy cells with healthy stem cells (Majhail et al., 2012). With an increase in the number of allogeneic HCTs and a decrease in mortality because of earlier transplantation, a resultant shift of focus to survivorship issues has occurred (Flowers et al., 2008). A major survivorship issue for patients receiving allogeneic HCT is the development of graft-versus-host disease (GVHD). About 40%–80% of long-term survivors of HCT experience chronic GVHD (cGVHD), which is a serious and often life-threatening condition. cGVHD may carry a high symptom burden for patients that may negatively affect functional status and quality of life (QOL) (Antin, 2002; Baird & Pavletic, 2006).

The incidence of cGVHD is rising as an increasing number of transplantations are being performed, particularly in older patients (Hahn et al., 2013; Veltri et al., 2013). Adequate assessment and targeted therapeutic interventions to mitigate distressing symptoms and long-term complications of this chronic condition are needed (Pérez-Simón, Sánchez-Abarca, Díez-Campelo, Caballero, & San Miguel, 2006). In addition, the identification of biomarkers associated with cGVHD is a priority for diagnosing and monitoring progression of cGVHD, as well as evaluating the efficacy of new therapies (Schultz et al., 2006).

Symptom management is a major concern for patients experiencing cGVHD (Lee, Cook, Soiffer, & Antin, 2002; Pérez-Simón et al., 2006). However, a gap in the literature remains that establishes the relationship between symptoms and QOL in individuals with cGVHD (Lynch Kelly, 2014). Little study has been performed on the relationship between symptoms and biologic markers of cGVHD despite that the interplay between biologic markers and symptoms may affect the frequency and severity of symptoms experienced by patients with cGVHD (Lynch Kelly, 2014). The