

Original Article

Living With Advanced But Stable Multiple Myeloma: A Study of the Symptom Burden and Cumulative Effects of Disease and Intensive (Hematopoietic Stem Cell Transplant-Based) Treatment on Health-Related Quality of Life

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Abstract

Context. The cumulative impact of disease and treatment-related factors on health-related quality of life (HRQoL) in long-term survivors of multiple myeloma is poorly characterized.

Objectives. To characterize HRQoL and symptom burden in advanced, intensively treated myeloma.

Methods. We performed detailed assessments in patients who had undergone hematopoietic stem cell transplantation and subsequent treatment for at least one episode of progressive disease. To exclude the impact of active disease and acute toxicity of treatment, patients were in a stable plateau phase. Patients were assessed for HRQoL (Short Form-12, European Organization for Research and Treatment of Cancer Quality of Life Questionnaire-Core 30, and Multiple Myeloma Module), pain (Brief Pain Inventory-Short Form), peripheral neuropathy (self-report Leeds Assessment of Neuropathic Symptoms and Signs), and concerns (adapted from Profile of Concerns). Serum interleukin-6 and tumor necrosis factor-alpha were measured.

Results. A total of 32 patients were enrolled, with a median age of 55 years at diagnosis and 60 years at assessment. After a median 5.5 years from diagnosis and three lines of treatment, physical functioning was significantly compromised ($P < 0.001$) and associated with progressive work disability and concerns regarding loss of independence. Fatigue and pain were the predominant symptoms, impacting negatively on physical functioning ($P < 0.001$). Pain was

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predominantly neuropathic in half the patients. Serum interleukin-6 levels positively correlated with pain ($P=0.03$), pain interference ($P=0.003$), insomnia ($P=0.02$), and appetite loss ($P=0.02$), and inversely correlated with physical functioning ($P=0.03$).

Conclusion. Despite disease control and supportive care, intensively treated long-term myeloma survivors have significantly compromised HRQoL related to symptom burden. Systematic assessment is routinely indicated in advanced phase myeloma, even when disease activity is stable. Further studies should investigate the utility of interventional strategies and the relationship of cytokines with symptoms. *J Pain Symptom Manage* 2013;46:671–680. © 2013 U.S. Cancer Pain Relief Committee. Published by Elsevier Inc. All rights reserved.

Key Words

Multiple myeloma, symptom burden, fatigue, pain, neuropathy, quality of life, psychosocial, late effects

Introduction

In most patients, multiple myeloma is an incurable disease, but treatment of active symptomatic disease may result in repeated phases of control. Delivery of more intensive treatment, including hematopoietic stem cell transplantation (HSCT) and introduction of novel agents, has resulted in significant improvements in life expectancy, with an extension of the median survival by 50% at all ages¹ and more profound improvements in younger patients, with predicted five- and 10-year survival estimates of more than 50% and 30%, respectively, in patients younger than 60 years.²

Before the widespread use of novel agents, patients with multiple myeloma were recognized to have the highest level of symptoms and the lowest health-related quality of life (HRQoL) among hematological cancers.³ Despite enhanced disease control, none of the current novel agents are free of significant toxicity, which frequently persists after completing treatment. Myeloma is thus increasingly being considered as a chronic disease state in which progressive damage from myeloma is potentially compounded by cumulative treatment-related toxicities.^{3–6} In addition to physical problems that accumulate in myeloma, psychological and social factors impact on HRQoL.^{7–12} However, compared with some other cancers with prolonged survival,¹³ relatively little is known in multiple myeloma about patients' psychosocial and broader holistic needs, particularly with modern clinical management strategies.

Thus, perhaps because of the tempo of improvements in survival in recent years, living as a long-term “survivor” with myeloma is inadequately defined. The aim of this exploratory study, therefore, was to characterize HRQoL, symptom burden, and the state of living with advanced, intensively treated multiple myeloma, and find relationships between HRQoL, pain, and demographic variables. In addition, based on correlations between serum cytokine levels including interleukin (IL)-1 β , IL-6, and tumor necrosis factor-alpha (TNF- α) and symptoms in other cancers,¹⁴ we used the opportunity to investigate the relationship between symptoms, using the European Organization for Research and Treatment of Cancer Quality of Life Questionnaire-Core 30 (EORTC QLQ-C30), the Brief Pain Inventory-Short Form (BPI-SF), and cytokines relevant to myeloma.

Methods

This cross-sectional study was approved by the local National Health Service Research and Development and research ethics committee and conducted in accordance with International Conference on Harmonization-Good Clinical Practice.

Patients were enrolled after informed consent and fulfilling eligibility criteria for symptomatic multiple myeloma by International Working Group criteria,⁴ with initial treatment including induction chemotherapy consolidated by at least one HSCT procedure

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