

Title: Health-related Quality of Life in transplant eligible multiple myeloma patients with or without early ASCT in the real-world setting

Authors: Mir M Asrar¹, Deepesh P. Lad², Dipika Bansal^{1*}, Shankar Prinja³, Alka Khadwal², Gaurav Prakash², Arihant Jain², Aditya Jandial², Pankaj Malhotra²

Author Affiliations: ¹Clinical Research Unit, National Institute of Pharmaceutical Education and Research (NIPER), SAS. Nagar, India, ²Department of Internal Medicine, ³Department of Community Medicine and School of Public Health, Postgraduate Institute of Medical Education and Research, Chandigarh, India

Aim: There is no comparative health-related quality of life (HR-QoL) data of transplant eligible multiple myeloma patients undergoing early autologous stem cell transplantation (ASCT) and those without in the real-world setting. The aim of this study was to evaluate the longitudinal QoL in those choosing to undergo early ASCT and those not undergoing early ASCT in transplant-eligible patients.

Methods: This was a prospective study conducted at a tertiary referral center in India over 2018-2020. All newly diagnosed multiple myeloma (NDMM) patients registered at the clinic were screened for eligibility. Patients were enrolled after obtaining informed consent. All patients \leq 65-years of age and ECOG performance status 0-2 without end-stage liver or heart disease were considered eligible for ASCT at our center. The choice of induction therapy was at the physician's discretion and patient as per his insurance coverage/ out-of-pocket expenses. We evaluated the HR-QoL in those undergoing early ASCT and those without using the EORTC QLQ-C30 and MY20 questionnaires longitudinally at three-time points. The Institutional Ethics Committee cleared the study. The mean scores and standard deviations of the HRQoL scales were calculated according to the EORTC QLQ scoring manual. Univariate regression analysis was used to predict the value of EORTC domains based on clinical and demographic characteristics.

Results:

A total of 205 NDMM patients were screened for eligibility during the study period. A total of 56 transplant eligible patients who underwent early ASCT and 65 transplant eligible (TE) patients who did not undergo early ASCT were included in the study. Both the TE groups were matched for age (mean 52.9 vs. 55, $p = 0.09$), gender (females 45% vs. 40%, $p = 0.6$), and other demographic and clinical characteristics. Barring the transient worsening in QoL one-month after ASCT, there was a comparable improvement in most QoL domains in those undergoing early-ASCT and those without. Post-ASCT patients had higher global health scores (71.9 vs. 60.8, $p < 0.05$) than those without ASCT at 12-months. Patients belonging to lower socioeconomic status (SES) were more likely not to undergo ASCT than middle-high SES patients (38.6% vs. 74.5%, $p < 0.05$). Age and gender had no impact on any QoL

domain. Lower socioeconomic status was associated with poor physical functioning (B:-7.0; 95% CI: -13.6, -0.3), role functioning (B:-8.5; 95% CI: -16.3, -0.9), higher fatigue (B:-11.2; 95% CI: -3.7, -18.7) and higher financial difficulties (B:-18.0; 95% CI: 5.4, 31.4) compared to middle-high income patients. Higher ISS stage was associated with inferior global health status (B:-7.4; 95% CI: -13.1, -1.6). VCD therapy was associated with inferior body image (B:-10.9; 95% CI: -21.7, -0.2) and more insomnia (B:12.9; 95% CI: -2.0, 23.8) than RVD therapy

Conclusions:

This study shows that early ASCT maintains QoL and should be encouraged in all transplant eligible patients.

Conflict of Interest Statement: "No conflict of interest to disclose"