Health-related quality of life in multiple myeloma in Kurdistan Iraq

Ameer I. A. Badi, Nasir A. Al-Allawi, Ahmed K. Yassin et al
Colleges of Medicine, Universities of Duhok, Hawler and Sulaimani – Kurdistan, Iraq

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Abstract

Background and aims: Multiple Myeloma is an incurable disease, but its prognosis has improved over the past two decades with the introduction of new modalities of therapy. Thus health-related quality of life (HRQoL) gained increasing importance to ensure that the improved survival is associated with improved life quality. Patients and Methods: This observational, cross-sectional, multicenter study enrolled 138 patients with symptomatic multiple myeloma patients visiting hematology/Oncology centers in Kurdistan, Iraq. The patients' records were retrieved and their clinical and laboratory findings at diagnosis as well as therapy were recorded. HRQoL was assessed using the European Organization for Research and Treatment of Cancer (EORTC) and the Quality of Life Multiple Myeloma module (QLQ MY20). Results: The patients' mean age (SD) was 60.4 (11.5) years and included 83 males and 55 females. They included 13 (9.4%) of light chain myeloma and 8 cases (5.8%) of non-secretory myeloma. The median time since diagnosis was 24 months while the median no. of courses received was 4. The mean scores (SD) of 28.41 (21.4), 25.12 (17.13), 66.83 (28.98), and 66.43 (33.09) for disease symptoms, side effects of treatment, future perspectives, and body image domains respectively. Significant predictors of worse HRQoL disease symptoms and side effects of treatment domians included increasing age, female sex, increased number of treatment courses. Other predictors associated with worse disease symptom domain include presence of bone lesions and non-secretory myeloma versus light chain myeloma. Serum LDH was associated with worse side effects of treatment scores. Conclusion: HRQoL in multiple myeloma treated by the three major Hematology/ Oncology centers in Iraqi Kurdistan is not much different from their Western counterparts and several predictors of worse quality of life were identified in this cohort of patients. Future studies should be longitudinal and include more comprehensive HRQoL testing should be encouraged.

Background

Health-related quality of life (HRQoL) have recently gained widespread attention in the assessment of patients' perspective on their management and treatment options in a multitude of hematological disorders. Multiple myeloma (MM) is a bone marrow based multifocal plasma cell neoplasm, usually associated with an M-protein in serum and/or urine. It is essentially an incurable malignancy, though its prognosis has improved markedly over the past 20 years as new treatment options continue to be introduced[1]. Current therapy protocols for newly diagnosed MM involve induction treatment with repeated cycles of two or more drug combinations followed in illegible patients by autologous stem cell transplant[2]. Drug therapy whether chemotherapy or treatment with proteasome inhibitors (PI) and immune-modulatory agents (IMID) causes a multitude of adverse effects which may have an impact on the patients' quality of life[1,3].

Objective

The aim of this study was to assess the HRQoL in a cohort of myeloma patients from Kurdistan region in Iraq.

Material and Methods

A total of 138 patients diagnosed with Multiple Myeloma and visiting the three main hematology/oncology centers in Iraqi Kurdistan (Hiwa Hospital-Sulemiani, Azadi hospital- Duhok, and Nana Kelly Hospital in Erbil) were available for inclusion in this cross-sectional study. The patients' records were retrieved and their clinical, radiological, and laboratory data at diagnosis were recorded. Furthermore, the treatment protocols were reviewed in detail in each, and the current therapy was recorded. The original diagnosis of Myeloma was based on the WHO criteria which is basically marrow plasma cells in excess of 10% with evidence of organ damage (Hypercalcemia, increased creatinine, bone lesions, and anemia)[3]. Myeloma Specific Health-Related Quality of Life (HRQoL) instrument namely the European Organization for Research and Treatment of Cancer Quality of Life Questionnaire EORTC QLQ- MY20 was used in all patients[14]. The module consists of 20 questions that cover four myeloma-specific HRQoL domains: Disease Symptoms, Side Effects of Treatment, Future Perspective, and Body Image. Three of these domains are multi-item scales: Disease Symptoms (includes bone aches or pain, back pain, hip pain, arm or shoulder pain, chest pain, and pain increasing with activity); Side Effects of Treatment (includes drowsiness, thirst, feeling ill, dry mouth, hair loss, upset by hair loss, tingling hands or feet, restlessness/agitation, acid indigestion/heartburn, and burning or sore eyes); and Future Perspective (includes worry about death and health in the future, and thinking about illness). The Body Image scale, on the other hand, is a single-item scale that tackles physical attractiveness. The average of each of the QLQ-MY20 domain scores is calculated and transformed linearly to a score ranging from 0–100. A high score for Disease Symptoms and Side Effects of Treatment represents a high level of symptomatology or problems, whereas a high score for Future Perspective and Body Image represents better outcomes. Informed consent was obtained from all recruited patients, and the study was approved by the ethical committee at the Kurdistan Board of Medical Specialties in Erbil, Iraq. Statistical analysis utilized the SPSS software (SPSS, IL, USA). Means (standard deviations) or range and medians were used as appropriate. Pearson correlations were used to evaluate the correlation between continuous variables, while the Man-Whitney U test and the Kruskal Wallis test were used as non-parametric tests to determine associations, as appropriate. A P<0.05 was considered significant.

Table 1. The main features of the 138 enrolled patients at diagnosis.

Parameter	Mean (SD)
Age (years)	60.4 (11.5)
Sex (M:F)	1.5:1
Hb (g/dl)	10.2 (2.1)
M-band Serum detected*	117 (84.8%)
M-band concentration (g/dL)	3.02 (2.23)
Non Secretory Myeloma*	8 (5.8%)
Light chain Myeloma*	13 (9.4%)
Serum Immunoglobulin (IF) [of 93 tested]*	
◦ IgG*	67 (72.0)
◦ IgA*	24 (25.8)
◦ IgM*	1 (1.1)
◦ Biclonal (IgG/A)*	1 (1.1)
S. Creatinine (mg/dl)	1.7 (2.9)
Bone lesions *	109 (78.99%)
Calcium (mg/dl)	9.4 (1.5)

Table 2 . Current therapy at the time of enrollment in 138 patients with myeloma.

Therapy at time of enrollment	Number
Proteasome Inhibitors ± chemotherapy	36
Immunomodulatory agents (IMID) maintenance	58
IMID + chemotherapy	7
Autologus stem cell transplant followed by IMID+Chemotherapy	11
Autologous stem cell transplant, currently off therapy	7
Off therapy	19

Table 3: European Organization for Research and Treatment of Cancer Quality of Life Questionnaire-Multiple Myeloma module score at the time of enrollment of 138 patients with Myeloma

Domain	Mean (SD)
Disease symptoms	28.41 ± 21.40
Side effects of treatment	25.12 ± 17.13
Future perspective	66.83 ± 28.98
Body image	66.43 ± 33.09

SD= Standard Deviation

Summary

Tables 1, 2 and 3 summarize patients' characteristics, therapy and HRQoL scores. MY20 Disease symptoms and Side effects of treatment domain scores increased with increasing age (P=0.001 and 0.026) and with number of treatment courses received (P=0.001 and 0.034). Moreover, a positive correlation between time since diagnosis and future perspective domain scores (P=0.03). Furthermore, it was found that females had significantly higher disease symptoms and side effect of treatment scores compared to males (P 0.001 and 0.38 respectively), while there were no significant correlations with other domain scores. The presence of bone lesions was also associated with higher disease symptom scores (p=0.009), but not with other domain scores. Moreover, a comparison between non-secretory myeloma, light chain myeloma, and myelomas with serum monoclonal bands revealed that the highest disease symptom scores were in those with non-secretory myeloma and the least were in light chain myeloma (P=0.045). In relevance to modality of therapy, it was found that the least disease symptoms and side effect scores were encountered in those who have underwent autologous stem cell therapy and are off therapy, while the highest ones are in those on IMID.

Discussion

The importance of HRQoL assessment in Multiple myeloma is basically related to it being an incurable disease with the main aim of therapy is to prolong life, delay progression, and deal with various complications while maintaining an acceptable HRQoL.[4] The mean MY20 HRQoL scores in the current study in all domains, except body image are within the ranges reported in European countries. Mean body image scores were 63.3% in the current study, which is much lower than in European studies.[5,6,7] The overall similarities in the HRQoL results between our study and those of developed countries may be related to similarities in the clinical characteristics and treatment modalities used in Europe and our country. Furthermore, the current study also documented similar age and sex correlations to than reported in developed countries[5]. Moreover, the increase in disease symptoms and side effects of therapy scores with a number of therapy courses is expected, and has also been documented by previous studies on French myeloma patients[7]. Myeloma bone disease is one of the most important complications of multiple myeloma and is due to bone destruction and lack of bone formation mediated by several complex pathways, and it is the main cause of morbidity and disability in this disease[8]. The observation that disease symptoms scores were significantly higher in NSM compared to secretory myelomas is likely to be related to the higher frequencies of renal insufficiency, bone lesions, and the number of treatment courses received in the former patients. Studies on NSM are really scarce due to the rarity of this entity, with contradictory observations regarding biological behavior and prognosis, and in the absence of monoclonal protein difficulties in monitoring as opposed to secretory myeloma. A major limitation of the current study includes it being a cross-sectional and not a longitudinal one. The latter type of study by following patients up and determining their quality of life through various periods of their illness and various forms of therapy may be more informative.

References

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