Multiple Myeloma Response to Therapeutic Protocols: An Iraqi Center Experience

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ABSTRACT

Background

Multiple myeloma (MM) is a clonal proliferation of neoplastic plasma cells producing a monoclonal paraprotein of light and/or heavy chain present in the serum and/or urine. [1] Achieving complete response (CR) is the initial goal of myeloma therapy. The recent therapeutic protocols increase MM CR and survival age. [2] This study aimed to determine the efficacy of the main protocols used in Iraq.

Materials & Methods

Setting: A cross-sectional study consecutively included all MM patients between July 2015 and May 2022 at one of the main hematology hospitals in Iraq, National Centre of Hematology/Mustansiriyah University, to assess the overall response rate (ORR) which represents CR, very good partial response (VGPR) and partial response (PR) versus non-response (NR) which represent stable disease (SD) and progressive disease (PD).

Patients: Of the 52 enrolled patients, the mean (±SD) age was 61.5±11.0 years with a 1.5:1.0 male to female ratio and 30.8% had comorbidities. Two participants (3.8%) died before the end of the study. The presenting features include bone pain and backache (67.3%), followed by a mass and lower limb weakness (1.9% each). The radiological changes were lytic lesions (34.6%) and vertebral wedging (15.4%). The main laboratory features were anemia (69.2%, 10.0±1.5g/dL), IgG kappa paraprotein (51.9 %), and high levels of creatinine (35.3%, 1.4±1.5mg/dL) and calcium (30.8%, 9.5±1.7mg/dL).

Interventions: The available drugs include bortizomib (V), cyclophosphamide (C), dexamethasone (D) lenalidomide (R) and thalidomide (T) were used in triple therapeutic regimens; VRD, VTD, and VCD, with or without autologous stem cell transplantation (ASCT). The outcomes were assessed for each protocol used.

Results & Main Outcomes

Among 52 patients, 50 were evaluated at a median follow-up of 60.5 months. The median survival could not be reached. ORR was achieved in 75% of the patients, and NR in 25%. When outcomes were stratified by treatment regimens, there were statistically significant differences in ORR; the best was observed among VRD-group (p<000.1). Subsequently, 21 (40.4%) patients received ASCT with non-significant differences in ORR from those without transplants (P>0.05).

Discussion

The incidence of MM varies according to geographic area, in USA about 30,000 new cases are diagnosed annually while in Iraq MM accounts for 1.08 % of cancer patients. [3,4]

In our study, patients presented from different governorates across Iraq and were not confined to a one governorate; they have a slightly lower median age at diagnosis when compared to the US and western data, probably due to different biology, and sociodemographic characteristics of our patients. Additionally, we found that men were 1.5 times more affected than women, and the most predominant disease subtype was IgG. These results were also in concordance with those found in other studies. [5] During the past decade, the survival rate of MM patients was significantly increased due to introducing of novel therapy.[6] In the current study, overall response rate was 75% with all types of treatments this may be explained by good follow-up and supportive treatment and it in accordance with many studies conducted all over the world.[7] Other results indicate that VRD was most efficacious and well tolerated induction regimens followed by VCD and then VTD, these results agree with other studies stating that no major difference was described between the main regimens. However, it was recently reported that triplet induction therapy VRD was superior in regards to response rates with comparable results. [8] Subsequently, 21 (40.4%) patients received ASCT with non-significant differences in ORR from those without transplants (P>0.05) which in contrast to AlHamed et al results, proved the effectiveness of ASCT in lengthening the time to first progression. [9]

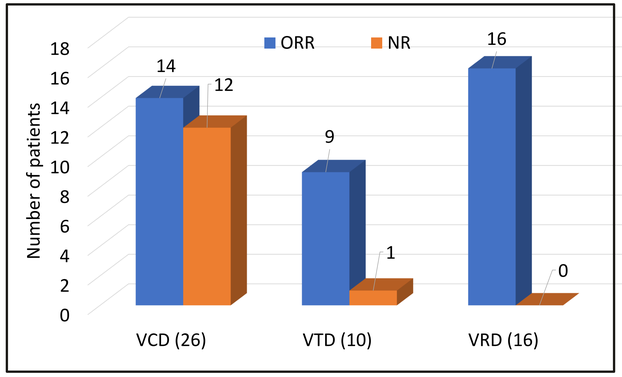


Fig 1: Response of MM patients to the triple regimens used.

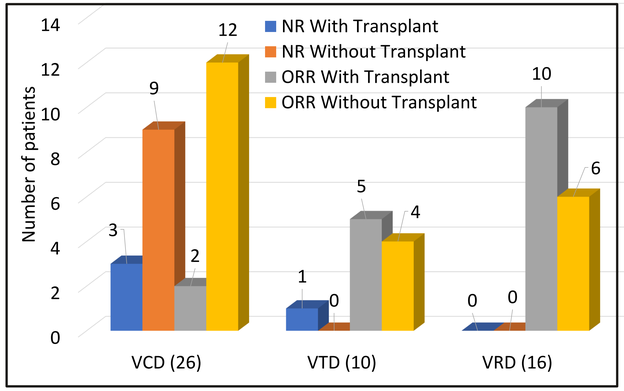


Fig 2: Response of MM patients to the triple therapeutic regimens used with and without ASCT.

Summary

This study concluded that presenting age for Iraqi MM patients was younger than in western countries and most patients presented with bone lesions; IgG was the most common type of paraprotein. VRD protocol was the most effective protocol with a better overall response rate.

References

1. Alant J, et al. The Diagnosis and Investigation of Multiple Myeloma in 2018. 2018: *Arch Clin Pathol J* 1:1. **2**. Rajkumar SV, Kumar S. Multiple Myeloma: Diagnosis and Treatment. *Mayo Clinic Proceedings*. 2016 01;91(1):101-119. **3**. Rajkumar SV. Multiple myeloma: 2018 update on diagnosis, risk-stratification, and management. *Am J Hematol*. 2018 08;93(8):1091-1110. **4**. Mjali A, Najeh Hasan Al Baroodi B. Some Facts About Cancers in Karbala province of Iraq, 2012-2020. *Asian Pacific Journal of Cancer Care*. 2020 06 07;5(2):67-69. **5**. Robert A. Kyle, et al. Review of 1027 Patients with Newly Diagnosed Multiple Myeloma. *Mayo Clinic Proceedings*, 78(1):2003; 21-33. **6**. João C, et al. Long-term survival in multiple myeloma. *Clinical Case Reports*. 2014 05 28;2(5):173-179. **7**. Attal M, et al., Lenalidomide, Bortezomib, and Dexamethasone with Transplantation for Myeloma, *N Engl J Med*, 376 (2017) 1311–1320. **8**. Lalit Kumar, et al. VRd versus VCd as induction therapy for newly diagnosed multiple myeloma: A Phase III, randomized study. *Clin Lymphoma Myeloma*, 1;19(10):e361. **9**. Al Hamed R, et al. Current status of autologous stem cell transplantation for multiple myeloma. *Blood Cancer J*. 2019;8;9(4):1-0.

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