

INTRODUCTION

MM is a hematological disorder characterized by proliferation of clonal plasma cells and overproduction of monoclonal antibody paraproteins, which results in end organ damage.

AIM

In this meta data analysis, the diagnosis, risk stratifications and management of all MM patients treated in Iraq were reviewed.

METHOD

MM is an aggressive disease and a limited study was published using data that originated from Iraqi cancer centers. This review article assists medical professions from Iraq to be aware of old and up-to-date scientific studies in the area. For that reason thirty-seven published articles were reviewed critically.

RESULTS

MM accounts for 1.08-1.3% of all registered cancers. Nearly 440 new cases diagnosed and 367 died with MM in 2020. The annual crude rates were 0.63 and 0.74 and The age-standardized incidence rates were 7.8 and 9/100,000 cases/year in both males and females respectively. The incidence rate is increased with rising age (mean age 59 years old). The male to female ratio was 1.3/1. The commonest clinical presentation was backache, bone pain and fatigue. Nearly 45% presented with stage III disease by Durie-Salmon Staging System in studies 10 years ago and 46% with stage II by internal staging system in later studies.

The Serum protein electrophoresis showed immunoglobulin IgG in 63%, IgA in 18%, light chain myeloma in 12%, nonsecretory myeloma in 6%, and biclonal in 1% of cases. The common myeloma-defining events were lytic bone lesion (79%), anemia (76%), renal impairment (22%) and Hypercalcemia in 12% of cases. Most popular protocols used were (bortezomib, lenalidomide and dexamethasone), (bortezomib, thalidomide and dexamethasone), (bortezomib and dexamethasone), (bortezomib, cyclophosphamide and dexamethasone), (bortezomib, melphalan and prednisone), (melphalan-prednisone) and (vincristine, mitoxantrone, and dexamethasone).

Mean survival rate was 4.5 years, 3 year in 72%, 6 years in 41% and post bone marrow transplant five years survival rate reported in 75% of cases. There were reported data for correlation of poor prognosis with factors as high levels of each of Hypercalcemia, interleukin 13, CD38, lactate dehydrogenase, CD34, serum GDF15, tumor necrosis factor- α , P53 mutation and finally low vitamin D.

CONCLUSIONS

MM in Iraq is nearly similar to what has been published in other countries, despite minor differences.

REFERENCES

1. Khoshnaw N, Mohammed HA, Abdullah DA. Patterns of Cancer in Kurdistan - Results of Eight Years Cancer Registration in Sulaymaniyah Province-Kurdistan-Iraq. *Asian Pacific J Cancer Prev.* 2015;16:8525–31.
3. Khoshnaw N, Yassin AK, Jalal SD, Safar BM, Abdulla BK, et al. The concentration and type of monoclonal protein and their impact on clinical severity in patients with symptomatic myeloma. *Advanced Medical Journal.* 2022;6(2):160–71.
4. Yassin AK. Clinical and Laboratory Profiles of 109 Patients diagnosed as Multiple Myeloma in Erbil City. *J Fac Med Baghdad.* 2013;55(2):121–4.

Summary of the results of Iraqi metadata analysis of all 37 published articles on multiple myeloma in the last two decades .

Variables	Results in meta data analysis
MM percent	1.08-1.3% / total cancer cases registered
Registered cases	440 new cases/ 367 deaths /2020
Annual crude incidence rate	0.63 (male) -0.74(female) new cases /100,000 population/year in all age groups (2006-2016)
Age standardized incidence R	7.8-9 new cases /100,000 population/year in \geq 65 years old
Age and gender	Mean 59 years, range 55-61 years, male to female 1.3/1
Clinical presentation	Backache, bone pain, fatigue, pallor, weight loss
Staging at presentation	Durie-Salmon Staging System 45% with stage III in the studies 10 years ago, recent studies 46% stage II by International staging system
Serum protein electrophoreses and IF	IgG 63%, IgA 18%, LCM 12%, NSM 6%, biclonal 1%
Myeloma defining events	Lytic bone lesion 79%, anemia 76%, renal 22%, Hypercalcemia 12%
Most common protocols used	VRD, VTD, VD, VCD, VMP, MP, VAD, supportive care
Survival	Mean survival rate 4.5 years, 3 year 72%, 6 years 41%, , post BMT 5 years SR is 75%
Poor prognostic indicators	Raised (calcium, IL3, CD38, LDH, CD34, GDF-15, TNF-alfa, P-53) Low vitamin D3

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