

Plasmacytoma and multiple myeloma in Basrah province

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ABSTRACT

Objective: to study trends of multiple myeloma and plasmacytoma in Basrah as a model of Asian countries and compare the results with those of western records.

Methods: retrospective review of 102 cases of multiple myeloma and plasmacytoma of both sexes registered in Basrah through the years 1996-2010 regarding their demographic features the collected data tabulated and analyzed.

Results: a total of 102 patients, 62 males and 40 females with a median age for males 56 years and for females 55 years multiple myeloma represented 92.2% of total cases while plasmacytoma represented 7.8%.

Conclusion:

-Incidence rate of multiple myeloma and plasmacytoma in eastern countries seems comparable to incidence rate in western countries but the incidence is low when compared to western statistics.

-Multiple myeloma and plasmacytoma showed no significant changes through the last 15 years.

INTRODUCTION

Plasma cell neoplasms are a group of entities characterized by neoplastic proliferation of a single clone of plasma cell that produce monoclonal immunoglobulin.^[1] Plasma cell neoplasm can present as a single lesion "plasmacytoma" or multiple lesions (multiple myeloma). Plasmacytoma most frequently occurs in bone (plasmacytoma of bone), but can be found outside bone (extramedullary plasmacytoma).^[2,3] Plasmacytoma of bone is composed of a single clone of plasma cell in absence of features of multiple myeloma.^[4,5] Multiple myeloma accounts for 1% of all malignancies and about 10% of hematological malignancies in USA,^[6,7] 5% of all plasma cell tumors are solitary plasmacytoma of bone, in USA the incidence rate is about 0.15/100000, and about 450 new cases per year.^[8] The incidence of all plasma cell malignancies is highest in black and lowest in Asians, in men twice that in women, the median age at diagnosis is 55 years, while in multiple myeloma, median age at diagnosis is 71 years.^[9] Solitary plasmacytoma of bone has been reported in patient as young as 15 years.^[1]

Surveillance, Epidemiology and End Result program (SEER) (1992-2004), indicate that the incidence of multiple myeloma was 5.35/100000, and it is 16 times higher than plasmacytoma. (IR = 0.34/100000).^[1] The primary risk factors of multiple myeloma are age, sex, race, organic solvent, insecticide and radiation. Several reports indicate increase in incidence rate in atomic bomb survivors in Japan.^[1,7] A nested study showed the presence but weak association between internal uranium dose estimated from urine analysis results and multiple myeloma.^[10]

This study aims to describe the time trend of multiple myeloma and plasmacytoma in Basrah over the periods 1996-2010.

METHODS

Data about multiple myeloma and plasmacytoma were collected from medical records of Basrah oncology and hematology center, cancer registration center and cancer registration section at department of pathology/Basrah medical college, for 15 years (1996-2010). The year 1996 was chosen as the beginning point;

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because at that time cancer registration was initiated and deemed reliable. Demographic characters of patient (age, sex, and residency) were recorded and the type of plasma cell tumor classified as multiple myeloma or plasmacytoma. Data were feed into the SPSS computer program for statistical analysis.

RESULT

The total number of multiple myeloma and plasmacytoma recorded in Basrah for 15 years (1996-2010) was 102 patients. Sixty two of them were males and 40 were females, with male: female ratio 1.5:1. The median age for males was 56 years and for females 55 years, while the mean age for males was 41.5 years and for female 34 years. The Total number of

plasmacytoma was 8 cases, 4 of them were males and 4 were females. Four cases are modularly plasmacytoma, the other four are extramedullary. Plasmacytoma respected 7.8% from the total cases. The median age for plasmacytoma was 44, 62 years for male and females respectively. The total number for multiple myeloma cases was 94 patients, 58 of them were males and 36 were females. Multiple myeloma was 11.7 times that of plasmacytoma. The lowest age for multiple myeloma in our series was 25 years for males and 37 years for females. The highest number of cases of multiple myeloma was recorded at the age of 51-60 years (35.2%). The details are shown in (Table-1)

Table 1. Age and sex distribution of multiple myeloma and plasmacytoma in Basrah 1996-2010.

Age	20-30	31-40	41-50	51-60	61-70	71-80	> 80
Male	3	4	10	22	10	11	3
Female	0	2	12	13	6	5	1
Total (%)	3(2.9)	6(5.9)	22(21.5)	35(34.3)	16(15.6)	16(15.6)	4(3.9)

The incidence rate of multiplmyeloma and rate was mort in males than in females (Table-plsmacytoma was (0.13-0.54). The incidence 2).

Table 2. Incidence rate and mean age of multiple myeloma and plasmacytoma in Basrah 1996-2010.

Years	Total no.	Male		Female		Incidence Rate
		No.	Mean age	No.	Mean age	
1996	6	2	76	4	51	0.42
1997	7	7	52.6	0	0	0.53
1998	6	3	62	3	57	0.37
1999	3	2	63	1	52	0.18
2000	4	2	73	2	54	0.23
2001	5	2	44	3	59	0.28
2002	7	4	62	3	57	0.36
2003	5	2	72	3	56.5	0.25
2004	12	10	67.8	2	88	0.5
2005	3	1	56	2	53	0.13
2006	9	6	68	3	49	0.4
2007	3	3	45.6	0	0	0.13
2008	13	8	46.8	5	52.3	0.54
2009	11	3	55	8	52	0.44
2010	8	6	52.2	2	48	0.31

The present study indicates trimodal trend (peaks of incidence in the years 1997, 2004 and 2008-2009). This can explain by variation in case detection and registration (Figure-1).

Inspite of environmental changes, the incidence rate of multiple myeloma and plasmacytoma still low when compared to international statistics.

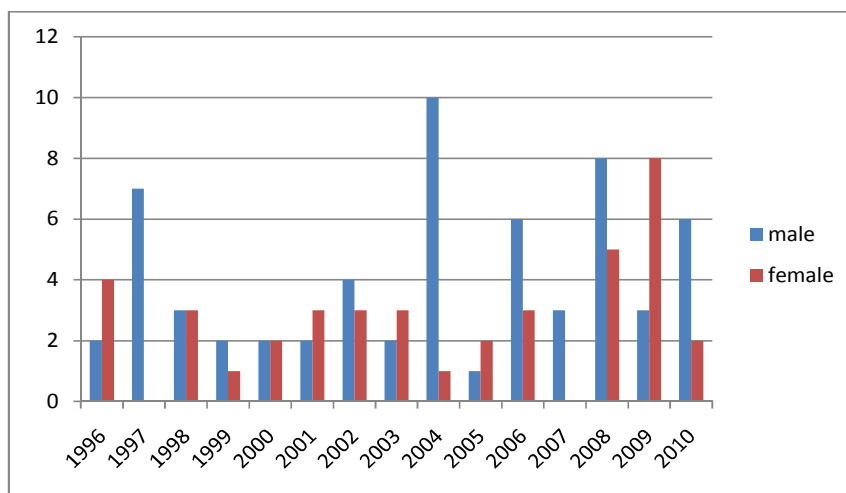


Figure (1) Multiple myeloma and plasmacytoma in Basra 1996 -2010

DISCUSSION

Multiple myeloma and plasmacytoma are highest in blacks, intermediate in whites, and lowest in Asians. The incidence rate of multiple myeloma and plasmacytoma in our study ranged from 0.13-0.54/100000 this appears low when compared to western statistics incidence rate in UK. was 5.8/100000, which is similar to incidence rates in Canada and USA.^[11] The incidence rate was comparable to Asia statistic, Indian report indicate incidence rate range from 0.5-1.2/100000.^[14] Another study from Taiwan show similar incidence rate.^[13,14] Multiple myeloma is 15-16 times higher than plasmacytoma, while in our study it was 11.7 times. Some studies have reported increasing multiple myeloma incidence mainly in younger age groups and suggested that this increase was

due to referral stream of younger age with multiple myeloma, and also increase in population above the age of 80 years.^[13,14] While another study concluded that incidence of multiple myeloma during the last 5 decades was stable. The study related that to the stable environmental and occupational conditions.^[12] although our study indicates increase in recording of plasmacytoma but no real conclusion can be given, the time trend of multiple myeloma plasmacytoma is inconclusive. The median age in USA for multiple myeloma was 71 years while in our study it was 56 years for males and 55 years for females. In western countries multiple myeloma in males is about twice that in females and this is comparable with our study (male: female =

1.5:1). The lowest age recoded in our series in males was 25 years and 37 years for females, while the highest age recorded for males was 85 years and for females 82 years. The peak incidence was at the age 51-60 years were 35 cases reported (34.3%). Above the age of 80 years only four cases reported (3.9%), while at the age of 20-30 years only three cases were reported (2.9%). Plasmacytoma in this study constituted 7.8% from the total cases. The total number of plasmacytoma was 8(4 males and 4 females) with a median age of 25 years.

In conclusion

- The incidence rate of multiple myeloma and plasmacytoma seems comparable to incidence rate in eastern countries but the incidence is low when compared to western statistics
- Multiple myeloma and plasmacytoma showed no significant changes in incidence through the last 20 years in spite of massive social, economic and environmental destruction in the area.

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