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Original Research

Clinicopathologic profile in Multiple Myeloma: A case series of 30 cases

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ABSTRACT

Objective: To evaluate the clinicopathological features of multiple myeloma at a tertiary centre hospital and aid further to the prevailing knowledge of the disease. **Method**: We retrospectively analysed 30 newly diagnosed patients with multiple myeloma over a period from 2007 to 2015. Diagnosis of new cases was based on the Salmon and Durie criteria which included Plasmacytoma – on biopsy, Bone marrow plasmacytosis>30% plasma cells, M band in serum (IgG >3.5 g/dl or IgA > 2g/dl) as major criteria. **Result**s: The study included 19 males and 11 females. Mean age of patient was 52 years with a range from 16 to 75 years. Common clinical features included bone pain (83%), weakness/fatigue(73%), backache (60%), pallor (53%) and pathologic fracture (40%).common laboratory features and radiologic features included anaemia (77%),bence-jones proteinuria(57%), lytic bone lesions (53%),hyperglobulinemia (47%),Raised LDH(40%),hypercalcaemia (37%),raised creatinine (30%). The most common gammopathy was found out to be IgG (80%).Bone marrow plasmacytosis (>30%) was seen in 67% of the patients. **Conclusion**: Multiple myeloma not being an infrequent condition, hence the knowledge of common clinical, radiologic and pathological features helps in the early, unerring diagnosis and thus better management of the condition.

Key words: Multiple myeloma; Bone marrow plasmacytosis.

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INTRODUCTION

Malignant prolifération of plasma cells derived from a single clone. It accounts for 1 % of all malignancies, 10-20 % of all hematologic malignancies. The cause of myeloma is not known. Increased frequency is seen in those exposed to the radiation, workplace exposure: - agricultural workers, metal occupations and industries, dye industry, petroleum industry. Common clinical features includes- Bone pain, weakness/fatigue, backache, pallor, pathologic fractures, and renal failure. Other less common findings are- Fever/PUO, Pyrexia, Respiratory symptoms & Neurologic deficit.

DIAGNOSTIC CRITERIA:

	Salmon and Durie Criteria
Major criteria	➢ Plasmacytoma on biopsy
	➢ Bone marrow plasmacytosis> 30% plasma cells
	➢ M Band in serum. • IgG >3.5 g/dl or IgA >2 g/dl • Light chain excretion in urine >1g/24 hours
Minor criteria	➢ Bone marrow plasmacytosis 10–30% plasmacells
	➢ Monoclonal globulin spike IgG <3.5 g/dl or IgA <2 g/dl
	➢ Lytic bone lesions
	➢ Normal IgM < 50 mg/dl, IgA <0. 1 g/dl or IgG <0.6 g/dl
Criteria	➢ Diagnosis of myeloma is confirmed at least ➢ One Major + One Minor criteria ➢ 3 minor criteria , that must include 1 and 2 of minor criteria

MATERIALS AND METHOD:
We retrospectively analysed 30 newly diagnosed patients with multiple myeloma over a period from 2007 to 2015. Diagnosis of new cases was based on the Salmon and Durie criteria which included Plasmacytoma – on biopsy, Bone marrow plasmacytosis>30% plasma cells, M band in serum (IgG >3.5 g/dl or IgA > 2g/dl) as major criteria.

RESULTS
It was retrospective study. The duration of study was from June 2007 to May 2015 during which 30 cases diagnosed as multiple myeloma were taken.

1 - AGE WISE DISTRIBUTION OF CASES

	MINIMUM	MAXIMUM	MEAN
AGE	48	80	59

Mean age of patient was 59 years with a range from 48 to 80 years.

2 - SEX WISE DISTRIBUTION OF CASES

	MALE	FEMALE	TOTAL
SEX	19	11	30

The study included 19 males and 11 females.

3: CLINICAL FEATURES:

BONE PAIN

NUMBER OF PATIENTS	PERCENTAGE
25/30	83%

Bone pain was seen in 25 cases (83%)

WEAKNESS/ FATIGUE

NUMBER OF PATIENTS	PERCENTAGE
22/30	73%

Weakness /Fatigue was seen in 22 cases (73%)

BACKACHE

NUMBER OF PATIENTS	PERCENTAGE
18/30	60%

Backache was seen in 18 cases (60%)

PALLOR

NUMBER OF PATIENTS	PERCENTAGE
16/30	53%

Pallor was seen in 16 cases (53%)

PATHOLOGIC FRACTURE

NUMBER OF PATIENTS	PERCENTAGE
12/30	40%

Pathologic fracture was seen in 12 cases (40%)

FEVER/PUO

NUMBER OF PATIENTS	PERCENTAGE
05/30	17%

Fever/PUO was seen in 05 cases (17%)

BLEEDING DIATHESIS

NUMBER OF PATIENTS	PERCENTAGE
02/30	07%

Bleeding diathesis was seen in 02 cases (07%)

RESPIRATORY SYMPTOMS (COUGH, BREATHLESSNESS, RECURRENT INFECTION)

NUMBER OF PATIENTS	PERCENTAGE
02/30	07%

Respiratory symptoms (cough, breathlessness, recurrent infection) were seen in 02 cases (07%)

NEUROLOGIC DEFICIT

NUMBER OF PATIENTS	PERCENTAGE
01/30	03%

Neurologic deficit was seen in 01 cases (03%)

4: LABORATORY FEATURES AND RADIOLOGIC FEATURES

ANAEMIA

NUMBER OF PATIENTS	PERCENTAGE
23/30	77%

Anaemia was seen in 23 cases (77%)

BENCE-JONES PROTEINURIA

NUMBER OF PATIENTS	PERCENTAGE
17/30	57%

Bence- Jones proteinuria was seen in 17 cases (57%)

LYTIC BONE LESIONS

NUMBER OF PATIENTS	PERCENTAGE
16/30	53%

Lytic bone lesions were seen in 16 cases (53%)

ROULEAX FORMATION IN PERIPHERAL BLOOD FILM

NUMBER OF PATIENTS	PERCENTAGE
14/30	47%

Rouleax formation was seen in 14 cases (47%)

HYPERGLOBULINEMIA

NUMBER OF PATIENTS	PERCENTAGE
12/30	40%

Hyperglobulinemia was seen in 12 cases (40%)

RAISED LDH

NUMBER OF PATIENTS	PERCENTAGE
11/30	37%

Raised LDH was seen in 11 cases (37%)

HYPERCALCAEMIA

NUMBER OF PATIENTS	PERCENTAGE
09/30	30%

Hypercalcaemia was seen in 09 cases (30%)

RAISED CREATININE

NUMBER OF PATIENTS	PERCENTAGE
08/30	27%

Raised creatinine was seen in 08 cases (27%)

PANCYTOPENIA

NUMBER OF PATIENTS	PERCENTAGE
06/30	20%

Pancytopenia was seen in 06 cases (20%)

5: GAMMOPATHY/IMMUNOPHORETIC ABNORMALITY

	NUMBER OF PATIENTS	PERCENTAGE
IgG	24/30	80%
IgA	05/30	17%
Free Light Chains	01/30	03%

- Most common gammopathy seen was IgG- 24 cases (80%)
- IgA gammopathy was seen in 05 cases (17%)
- Free light chain gammopathy was seen in 01 cases (03%)

6: BONE MARROW PLASMACYTOSIS (>30%)

	NUMBER OF PATIENTS	PERCENTAGE
0-10%	03/30	10%
11-30%	07/30	23%
>30%	20/30	67%

- Bone marrow plasmacytosis (>30%) was seen in 20 cases (67%) of the patients.
- Bone marrow plasmacytosis (11-30%) was seen in 07 cases (23%) of the patients.
- Bone marrow plasmacytosis (>30%) was seen in 03 cases (10%) of the patients.

TABLE 1: CLINICAL FEATURES AND THEIR OCCURRENCE

S.NO	CLINICAL FEATURE	NO OF PATIENTS(OUT OF 30)	PERCENTAGE (%)
1	Bone pain	25	83
2	Weakness / Fatigue	22	73
3	Backache	18	60
4	Pallor	16	53
5	Pathologic fractures	12	40
6	Fever / PUO	05	17
7	Bleeding diathesis	02	7
8	Respiratory symptoms(cough , breathlessness, recurrent infection)	02	7
9	Neurologic deficit	01	3

GRAPH 1: CLINICAL FEATURES AND THEIR OCCURRENCE

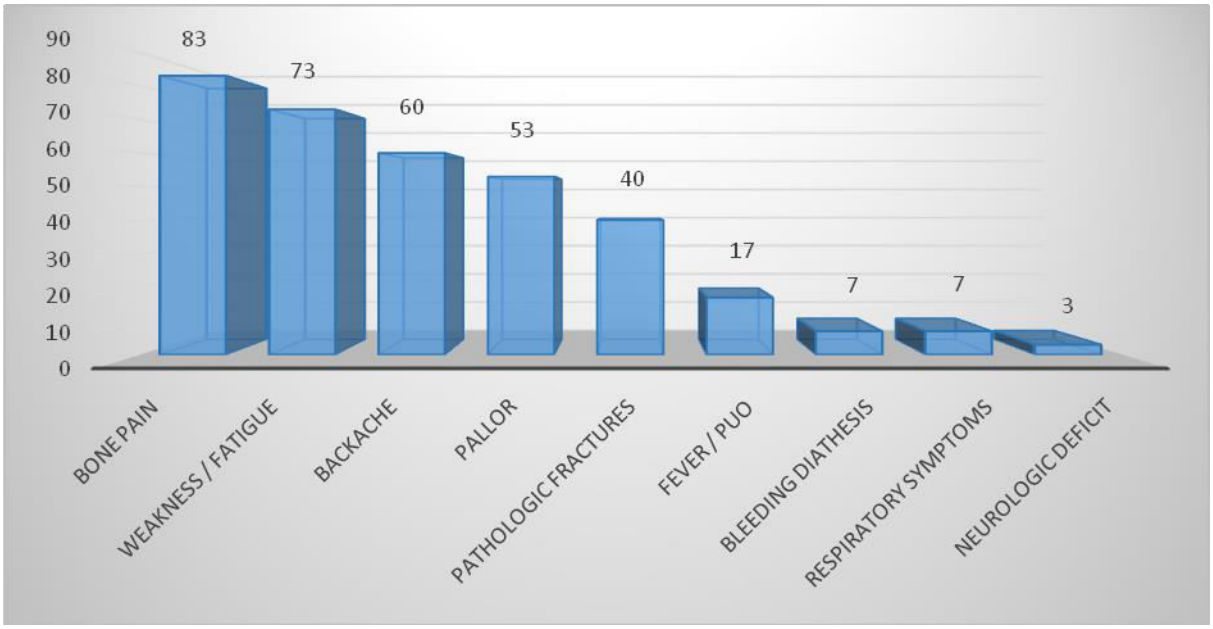
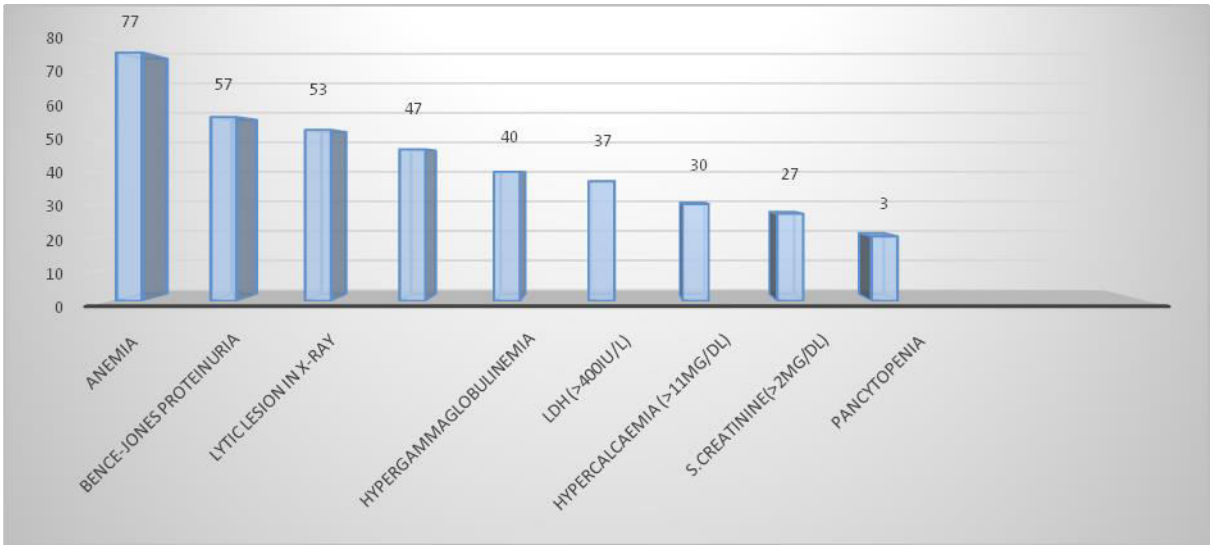
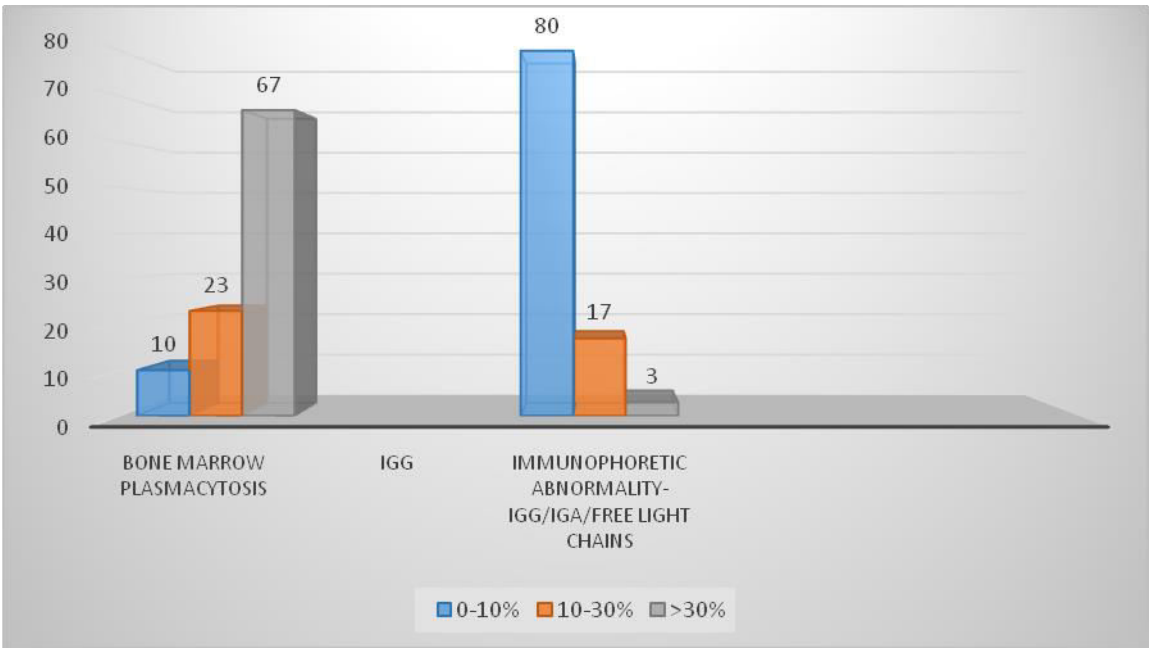


TABLE 2: LABORATORY AND RADIOLOGIC FEATURES& THEIR OCCURENCE

S.NO	LABORATORY AND RADIOLOGIC FEATURES	NO OF PATIENTS (OUT OF 30)	PERCENTAGE (%)
1	Anemia	23	77
2	Bence-jones proteinuria	17	57
3	Lytic lesion in X-Ray	16	53
4	Rouleax formation in peripheral blood film	14	47
5	Hypergammaglobulinemia	12	40
6	LDH (>400IU/L)	11	37
7	Hypercalcaemia (>11mg/dl)	09	30
8	S.Creatinine(>2mg/dl)	08	27
9	Pancytopenia	06	20
10	Immunophoretic abnormality • IgG • IgA • Free light chains	 24 05 01	 80 17 03
11	Bone marrow Plasmacytosis • 0-10% • 10-30% • >30%	 03 07 20	 10 23 67

GRAPH 2: LABORATORY AND RADIOLOGIC FEATURES& THEIR OCCURENCE





DISCUSSION

From the study we can see that multiple myeloma is a disease of older age group with male predominance Common clinical features of multiple myeloma included bone pain (83%), weakness/fatigue(73%), backache (60%), pallor (53%) and pathologic fracture (40%).Common laboratory features and radiologic features of multiple myeloma included anaemia (77%), bence-jones proteinuria(57%), lytic bone lesions (53%),hyperglobulinemia (47%), Raised LDH(40%), hypercalcaemia (37%), raised creatinine (30%). The most common gammopathy was found out to be IgG (80%). Bone marrow plasmacytosis (>30%) was seen in 67% of the patients. These findings are consistent with those seen in various studies.

CONCLUSION

Multiple myeloma not being an infrequent condition, hence the knowledge of common clinical, radiologic and pathological features helps in the early, unerring diagnosis and thus better management of the condition.

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