

# An Evaluation Of Bone Tumours In Mixed Urban And Rural Population Of Lahore

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This study includes 104 cases of bone tumours reported during the period (1995 to 1997) at department of Radiotherapy and Oncology, K. E. Medical College, Lahore. The data analysed revealed 3.40% of all malignancies. Metastatic diseases from other primaries & bones were not included. Male & female ratio was found as 2.3:1. The average age in male was 30.26 years & in female 30.08 years . Majority(95%) of the said cases belonged to low socio-economic group . Only 5% were from well off families. Out of the total 104 cases (41.6%)were young & school going. (25%) were household women & the rest were manual labourer, farmers & shopkeepers. Major signs & symptoms noted included swelling (40%), pain (30%) . Both pain & swelling as part of associated complaints noted in (25%) of the total cases . The rise in fever noted in (12.35%) cases, where as (9.88%) had shown significant loss of weight. History of trauma was noted in (32.5%) cases, anorexia in (8.64%) & neurological deficits were noted in (12.99%) cases. Most of the cases had lower limbs involvement (76%), however rest had the upper limb involvement. Nearly (22.22%) of the patients presented during the first four months whereas (41.67%) reported in the 5th to 8th months. The performance status of the patients and other parameters were also evaluated and analysed.

Sarcomas of bones are uncommon malignant lesions that are characterised by a diversity in presentation and biological behaviour<sup>1</sup>. The bone tumours are relatively rare and the incidence varies according to age. The commonest malignant tumours include osteosarcoma, Ewing sarcoma, lymphoma, chondrosarcoma and parosteal Osteosaroma. When compared to the risk for metastatic carcinoma to skeleton , the numbers vary with age but are at least two orders of magnitude greater than for primary lesions. The cells reach at the stage of maturity that allows to produce collagen alone ,the tumour is fibrosarcoma. Because it is the most mature of the cell type , this cell produces a tumour that goes slowly and is late to metastasize, Less mature cells can be resulted in Chondroblastoma, Chondromyxoid fibromas or chondrosarcomas. Finally very immature cells which produce more of these, the tumour is osteosarcoma the most malignant variety of these<sup>2</sup>. The frequency of osteogenic sarcoma and Ewing sarcoma is higher in adolescents than in adults. Bone tumours are the main domains of radiation therapist, medical oncologists, radiologists, Pathologist, orthopaedic surgeons. The tumours represent a diagnostic challenges because they have vast variety of presentation and considerable variation biological behaviour. In recent years the marked productive research has been done on the clinical and basic aspect of the disease and as a result , there has been a marked Improvement in outlook for patient with lesions that only a few decades ago were thought to be virtually incurable.

## Patient And Methods

In this study conducted during last 2 years, the patients were referred to the department of Radiotherapy and Oncolgy Mayo Hospital Lahore after preliminary evaluation from the different centres of the province. In this department all basic parameters were evaluated and a proforma was designed which included clinical as well as laboratory findings .General physical examination alongwith detailed presenting complaints ,duration of disease, profession, mode of treatment, age at

presentation,physical site of involvements, sex and details of socio-economic condition as well as habits were recorded General and specific laboratory investigations were carried out of in the department of Radiology ,Pathology ,Biochemistry and Atomic Energy Medical Centre Mayo Hospital Lahore In the light of staging work up, patients were subjected to trement ie surgery,Radiotherapy and Chemotherapy and combined modalities.

## Results

This study pertains to the results of 104 cases studied during July 1995 to July 1997. 2559 patients were reported & examined in the deptt. of Radiotherapy. The figures are reflected in table No.I

Table-I

	n=	Bone Tumour
1st July 95 to 30th June 96	1486	64(4.30%)
1st July 96 to30th June, 1997	1063	40(2.40%)
Average	3.40%	

The age limit of above mentioned patients varied from under 10 to 60 years. The highest percentage (61.53%) was noted in the age group between 11 to 30 years which is significant, The details are given in table No.II

Table-II

Age In Years	n=	%age
1-10	8	07.69
11-20	46	44.23
21-30	18	17.30
31-40	8	07.69
41.50	13	12.50
51-60	11	10.57

A remarkable difference of sex was seen in distribution of the disease between male and female. Almost 70 % of males as compared to 30 % of female with ratio of 2.3:1 was registered. This incidence was noted in average age group. 30.26 years in males and 30.08 years in female respectively.

The most common occupation exposed to bone tumours in this study was group of young students (30%) as compared to household ladies (20%) manual labourer (25%), farmers (5%), and 20% were registered in miscellaneous categories.

The chief presenting complaints were noted in this evaluation and pain was (20%), swelling (40%) pain & swelling (25%), burning sensation (5%). Only 10% cases were registered in the miscellaneous group Table-III.

Table -III Presenting Complaints

	Total No. of Cases	%age
Pain	21	20%
Swelling	42	40%
Pain & Swelling	26	25%
Burning Sensation	5	05%
Miscellaneous	10	10%

The associated complaints noted in a total of 104 cases were fever(5%), anorexia (20%), neurological deficits alongwith haemorrhage (2.5%). The most significant associated was noted to be 65% which is quite high.

The duration of the disease varied from under 4 months to 24 months. The high percentage of the patients in this study were bracketed within 5-8 months period (40.38%). However a remarkable decline(4.80%) was seen in the group of patients where duration of disease was 13-24 months. The details given in table IV.

Table IV

Age	Total No. Of Cases	Percentage
0-4 Months	26	25
5-8 Months	42	40.38
9-12 Months	31	29.80
13-24 Months	5	04.80

Histopathological analysis on 104 cases revealed a beautiful pathological picture. The highest percentage of (41.34%) was registered as osteosarcoma type whereas (26.92%) Ewing sarcoma. mixed osteo & chondrosarcoma was seen in only 5 cases (5.76%only) The details of histopathological presentation is given in table V.

Table-V

	n=	%age
Osteosarcoma	43	41.34
Ewing Sarcoma	28	26.92
Chondro Sarcoma	10	9.61
Osteo Claustoma	7	6.73
Osteosarcoma+Chondrio Sarcoma	10	5.76
Osteoblastic Sarcoma	10	9.61

Although the cure rate according to the following procedures adopted was low(8%), still the follow up was continued up to 12 months. The cure rate noted in one of the study where bone and soft tissue sarcoma had been 20% which was suggestive of radical ablations of the primary tumour in more than 80% of the patients, Osteosarcoma already has been disseminated at the time when patient is first seen, as evidence by the rapid and frequent development of pulmonary metastasis soon after diagnosis<sup>3</sup>. The procedures however adopted were surgery where all the 104 cases were biopsied, 58 patients were amputated with curative intents. However

92 cases were exposed to radiation therapy after surgery, as palliative treatment and part of limb salvage surgery. Chemotherapy, however was continued with 34 cases in advanced disease and as neoadjuvant therapy in limb salvage. Although only 8 patients responded the multi-disciplinary approach, the response was very poor which could be improved by early diagnosis, prompt curative measures and regular follow up.

## Discussion

A large number of studies cited in the national and international literature identified the factors that influence the survival in patients who have an Osteosarcoma, have yielded conflicting data about the effect of patients age and sex, the site and size of the tumour, and the pathological findings on prognosis<sup>4-13</sup>.

Although our study revealed the minimum correlations with the formal studies conducted abroad, however had persistent pattern with regard to age and sex with studies conducted at the national level. The high incidence (65.5%) of Osteosarcoma was registered in the age group of 11-30 years. Disease pattern in both the sexes when compared showed high prevalence in males (70%). Our data identifies the high percentage of occupation showing high incidence of Osteosarcoma noted in various occupations. The incidence was 30% in young students and minimum (5%) in the farmers. A significant co-relation was seen in the presenting complaints of the patients with their associated symptoms. Pain in 20%, swelling in 40% and pain+swelling was in 25% of the cases. Where as associated symptoms were fever(5%), anorexia (20%) and neurological deficits(2.5%). It was noteworthy to mention that majority of the patients got registered with the deptt, very late which is contradictory to the laid down para-meters of early detections. It is understandable that such delays cause diversity in the management and results in poor prognosis. The maximum yield identified osteosarcoma(41.34%) among 104 cases where as Ewing sarcoma, Chondrosarcoma and osteoblastoma were diagnosed respectively. The improved survival of patients with osteosarcoma in the last decade can be attributed mainly to the advances in neoadjuvant and adjuvant chemotherapy (Linketal 1996) with the further advances in imaging and re-constructive surgery. Limb salvage is now the definitive treatment for carefully selected patients.

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