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Original Research Paper

Study of Miliary Tuberculosis in Patients Attending Government Hospital for Chest and Communicable Diseases ,Visakhapatnam ,A.P.

Medical Science

KEYWORDS : Miliary TB, MDR TB, HIV Seropositive, Extrapulmonary

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INTRODUCTION

Tuberculosis is an infection with Mycobacterium tuberculosis which can occur in any organ of the body. Tuberculosis(TB) remains one of the world's deadliest communicable disease and a public health issue. The central event in the development of miliary TB is a massive lympho hematogenous dissemination of M. tuberculosis from a pulmonary or extrapulmonary focus and embolization to the vascular beds of various organs. It most commonly involves the liver, spleen, bone marrow, lungs, and meninges. The most likely reason for this distribution is that these organs have numerous phagocytic cells in their sinusoidal wall. Sometimes, simultaneous reactivation of multiple foci in various organs can result in miliary TB. This reactivation can occur either at the time of primary infection or later during reactivation of a dormant focus. When miliary TB develops during primary disease (early generalization), the disease hasan acute onset and is rapidlyprogressive. Late generalization during postprimary TB can be rapidly progressive (resulting in acute miliary TB), episodic, or protracted, leading to chronic miliary TB. Reinfection also has an important role, particularly in highly endemic areas with increased transmission of M. tuberculosis. Constitutional symptoms Presentation with fever of several weeks duration, anorexia, weight loss, lassitude, and cough is frequent. Occurrence of daily morning temperature spikes is reported to be characteristic of miliary TB. However, fever may be absent and the patients may present with progressive wasting strongly mimicking a metastatic carcinoma . Chills and rigors, described in patients with malaria, or sepsis and bacteremia, have often been described in adult patients with military TB . A typical presentations can delay the diagnosis, and miliary TB is often a missed diagnosis. Patients with occult miliary TB can present with "pyrexia of unknown origin" without any localizing clue.

AIMS & OBJECTIVES

1. To study the clinical profile of miliary Tuberculosis.
2. To evaluate the treatment response by symptomatology, sputum conversion, radiological resolution after 2 months and 6 months periods.
3. To study the complications and incidence of MDR TB in Miliary tuberculosis

PATIENTS AND METHODS

This study is a prospective observational study. 40 cases with a provisional diagnosis of miliary tuberculosis attending the Government hospital for chest and Communicable diseases were selected for the study during the period 2014-15.Theclinico-radiological features, treatment response and incidence of complications including the incidence of MDR-TB were analysed.

INCLUSION CRITERIA:

All cases presenting with military mottling in Chest X Ray along with 1.Clinical feature consistent with tuberculosis i.e, cough with or without expectoration for more than 2 weeks, evening rise of temperature, unexplained loss of weight, loss of appetite, shortness of breath, night sweats.

2. HIV seropositive cases with constitutional symptoms like pyrexia of unknown origin, unexplained loss of weight for more than 1month and generalised lymphadenoipathy.

EXCLUSION CRITERIA

Age < 13yrs

2. Patients with history of previous malignancy or pneumoconiosis

All the selected patients are subjected to the following investigations.

1. Routine blood investigations including Haemoglobin concentration, Total and differential leucocytecount, Random blood sugar, Blood Urea, Serum Creatinine, ESR, Serum proteins, Serum bilirubin, clotting time and bleeding time.
2. ELISA for HIV
3.Examination of sputum for AFB for 2 samples
4.Roentgenogram - chest PA view
5. Tuberculin skin test
6. Ultrasound abdomen
7. HRCT scan of chest *If necessary*,
8. FNAC of lymphnode for HPE/AFB
9. Fundus occuli examination
10. Pleural fluid analysis
11.CSF analysis
12. Ascitic fluid analysis
13. Bone marrow aspiration biopsy.
14.FOB guided TBLB

OBSERVATIONS & RESULTS

AGE AND SEX DISTRIBUTION:

In the present study, majority were males and they constitute 57.5% of study population and females constituting remaining 42.5% . The mean age of the study population was 41.

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TABLE 1
AGE DISTRIBUTION

AGE	MALES	FEMALES	TOTAL(n=40)
14-20YRS	1	1	2 (5%)
21-40YRS	7	11	18 (45%)
41-60YRS	13	5	18 (45%)
>60YRS	2	0	2 (5%)

GRAPH 1

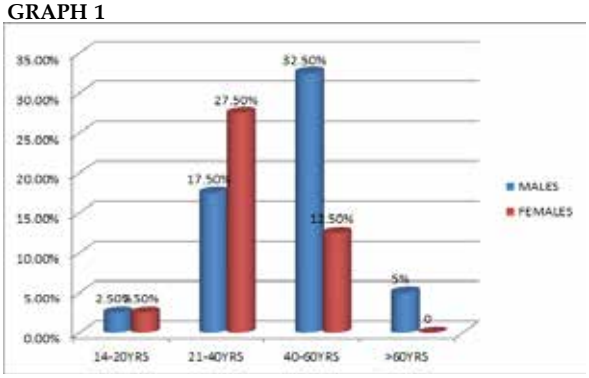


TABLE 2
SEX DISTRIBUTION

SEX	NUMBER OF CASES
MALE	23 (57.5%
FEMALE	17(42.5%)

TABLE 3
DURATION OF PRESENTATION

DURATION OF PRESENTATION	NUMBER OF CASES (n=40)
1-10 DAYS	2 (5%)
11-30 DAYS	15 (37.5%)
1-2 MONTHS	15 (37.5%)
2-3 MONTHS	8 (20%)

GRAPH 2

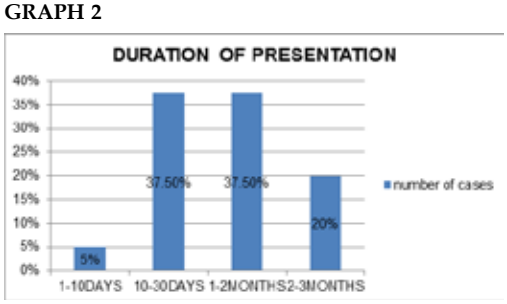


TABLE 4
SYMPTOMS AND SIGNS

SYMPTOMS	NUMBER OF CASES (n=40)
COUGH	36 (90%)
FEVER	35(87.5%)
LOSS OF APPETITE	32 (80%)
SHORTNESS OF BREATH	24 (60%)
EXPECTORATION	20(50%)
NIGHT SWEATS	20(50%)
LOSS OF WEIGHT	18 (45%)
WEAKNESS	17 (42.5%)
CHEST PAIN	10 (25%)
ABDOMINAL PAIN	4 (10%)
HEMOPTYSIS	1(2.5%)
HEADACHE	2 (5%)

GRAPH 3

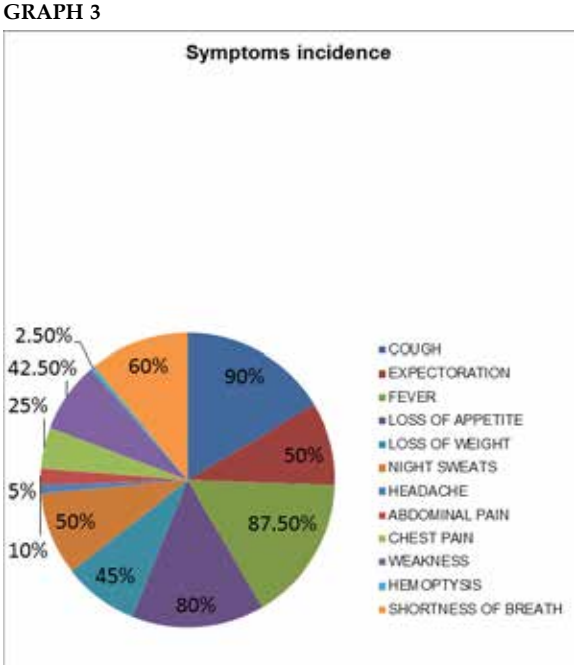
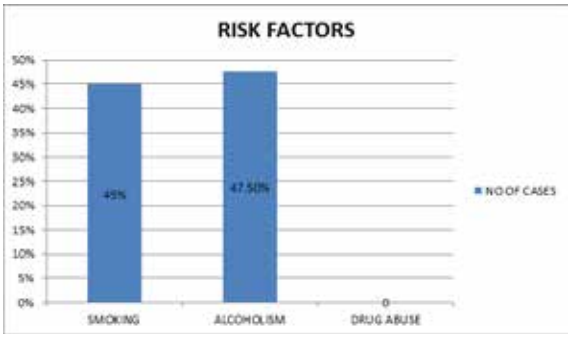


TABLE 5
RISK FACTORS

RISK FACTOR	TOTAL (%)
SMOKING	18 (45%)
ALCOHOLISM	19 (47.5%)
DRUG ABUSE	0 (0%)

GRAPH 4



COMORBID CONDITIONS: TABLE 6
COMORBID CONDITIONS

COMORBIDITY	NUMBER OF CASES (n=40)
DIABETES	2 (5%)
HIV	5 (12.5%)
CKD	1 (2.5%)
NIL	32 (80%)

GRAPH 5

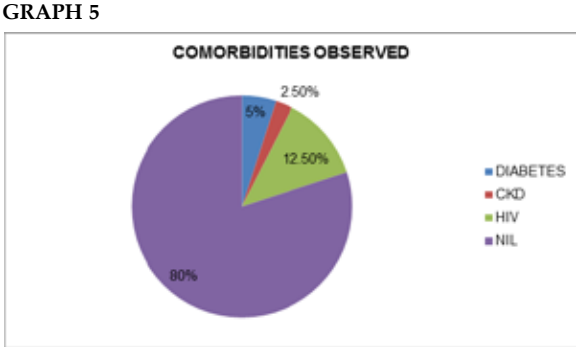
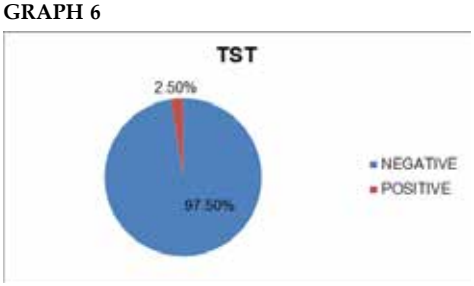


TABLE 7
TUBERCULIN SKIN TEST

TST	NO. OF CASES (n=40)
POSITIVE	1(2.5%)
NEGATIVE	39 (97.5%)

GRAPH 6



CHEST X RAY (CXR) FINDINGS: TABLE 8
CXR FINDINGS

CHEST X RAY FINDINGS		NUMBER OF CASES (n=40)
MILIARY MOTTLING ONLY		29 (72.5%)
MILIARY MOTTLING WITH	CONSOLIDATION	2 (5%)
	PLEURAL THICKENING	2(5%)
	PLEURAL EFFUSION	6(15%)
	CAVITY	3 (7.5%)

GRAPH 7

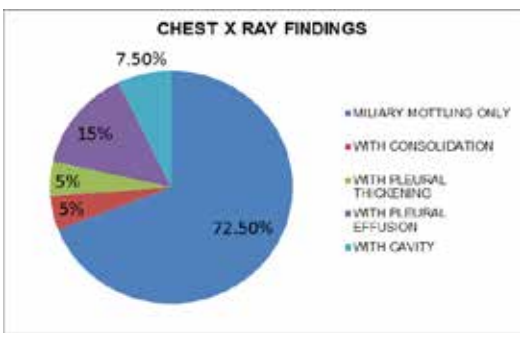


TABLE 9
HEAMATOLOGICAL PROFILE

HEMATOLOGY PROFILE	NO. OF CASES
ANEMIA	20 (50%)
PANCYTOPENIA	1(2.5%)
LEUCOCYTOSIS	1 (2.5%)
NORMAL	19 (47.5%)

GRAPH 8

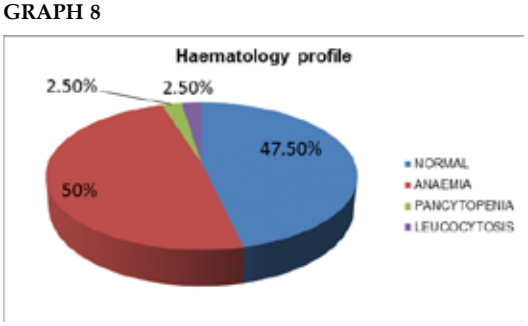


TABLE 10
SPUTUM FOR AFB

ACID FAST BACILLI		NO. OF CASES(n=40)
NEGATIVE		35 (87.5%)
POSITIVE	SPUTUM FOR AFB 2 SAMPLES	3 (5%)
	INDUCED SPUTUM FOR AFB	2 (2.5%)

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GRAPH 9

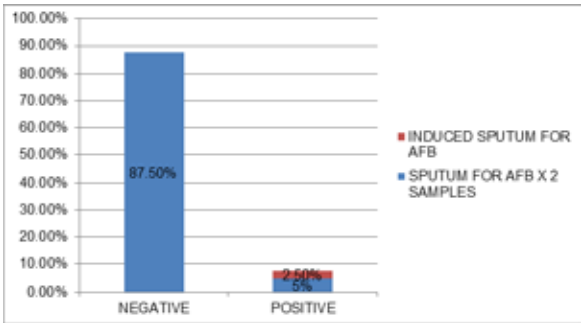


TABLE 11
HRCT CHEST FINDINGS

HRCT FINDINGS		NO. OF CASES (n=40)
MILIARY NODULES ONLY		25 (62.5%)
MILIARY NODULES WITH	MEDIASTINAL ADENOPATHY	4 (10%)
	MULTILOCULATED HYDROPNEUMOTHORAX	1(2.5%)
	FIBROSIS	1(2.5%)
	CAVITY	3 (7.5%)
	CONSOLIDATION	2 (5%)
	PLEURAL EFFUSION	6 (15%)
	CHEST WALL GRANULOMA	1(2.5%)
	TREE IN BUDS	1 (2.5%)

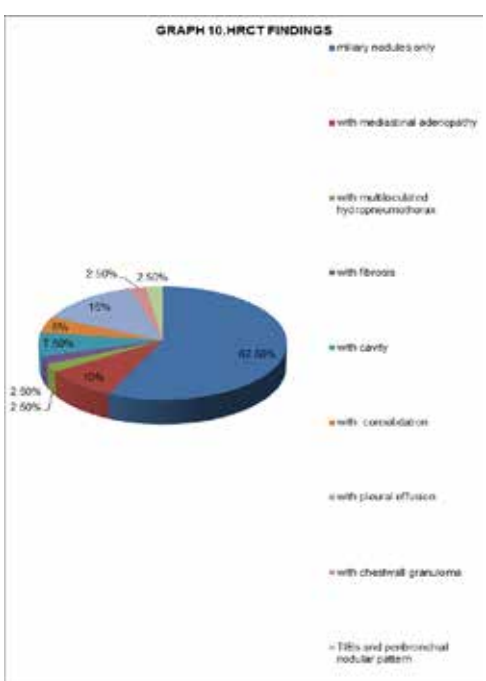
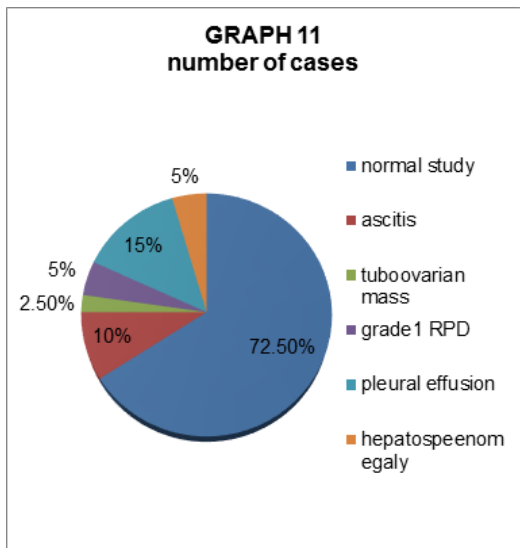


TABLE 12
ULTRASOUND ABDOMEN FINDINGS

ULTRASOUND ABDOMEN FINDINGS	NO. OF CASES (n=40)
NORMAL	29 (72.5%)
ASCITIS	4 (10%)
TUBO OVARIAN MASS	1 (2.5%)
RENAL PARENCHYMAL DISEASE	2 (5%)
PLEURAL EFFUSION	6(15%)
HEPATOSPLEENOMEGALY	2(5%)



PLEURAL FLUID ANALYSIS:
Pleural effusion was present in 6 out of 40 cases(15%) in the study population pleural fluid analysissuggestive of an exudate with lymphocyte predominance in all the 6 cases.. ADA levels were above 40 IU/L in all 6 cases.

FNAC OF LYMPHNODE:
Supraclavicular lymphnodes were palpable in 3 out of 40 (7.5%)cases. FNAC of lymphnode was done in all the 3 cases. Tubercular lymphadenitis was confirmed in 2 of 3 cases. Another case doesn't show any granulomas or malignant cells.

ASCITIC FLUID ANALYSIS:
In the study population, Ascitic fluid was reported in 4 of 40 (10%) cases . Fluid was sent for ADA level analysis suggesting lymphocyte predominance with high protein content. All the cases reported ADA level above 40 IU/L.

FUNDUS OCCULI EXAMINATION:
In the present study population, fundus occuli examination was done in all the cases. But none of the cases reported choroid tubercles in this study.

CSF ANALYSIS:
CSF analysis was done in 2 out of 40 cases who had the complaints of headache and vomiting. Of the two, onecase was suggesting tubercular meningitis with lymphocyte predominance, low glucose level and high ADA level(>10 IU/L).

FIBRE OPTIC BRONCHOSCOPY:
Done in one case suspectingmiliary metastasis in the present study. TBLB was done in this case to confirm the diagnosis but its report was inconclusive for TB / Malignancy.

TREATMENT GIVEN : TABLE 13
TREATMENT GIVEN

TREATMENT	NUMBER OF CASES (n=40)
ATT IN CONFIRMED CASES	7 (17.5%)
EMPIRICAL ATT	33 (82.5%)
CORTICOSTEROIDS	2 (5%)
NIV	2 (5%)

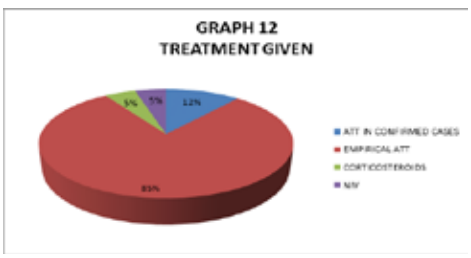


TABLE 14
OUTCOME

OUTCOME			NO. OF CASES (n=40)
CLINICAL AND COMPLETE RADIOLOGICAL IMPROVEMENT	2 MONTHS	CLINICAL	37 (92.5%)
		RADIOLOGICAL	27 (67.5%)
	6MONTHS	CLINICAL	37 (92.5%)
		RADIOLOGICAL	37 (92.5%)
DEATHS	1 (2.5%)		2 (5%)
LOST TO FOLLOWUP			

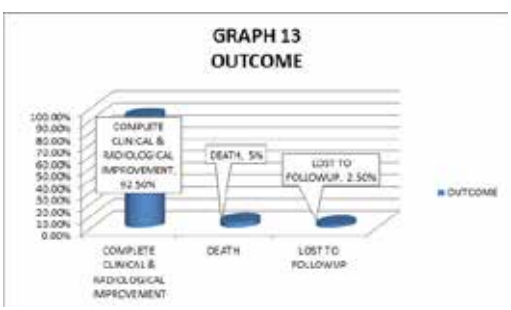
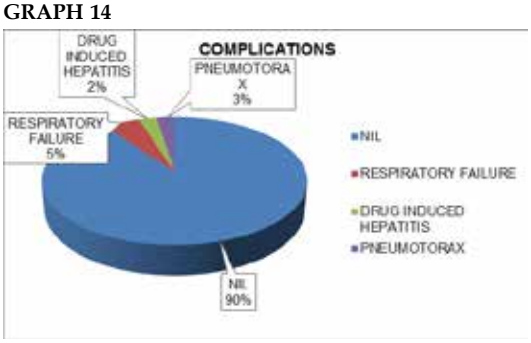


TABLE 15
COMPLICATIONS

COMPLICATION	NO. OF CASES
DRUG INDUCED HEPATITIS	1 (2.5%)
PNEUMOTHORAX	1(2.5%)
RESPIRATORY FAILURE	2 (5%)
NIL	36 (90%)

GRAPH 14



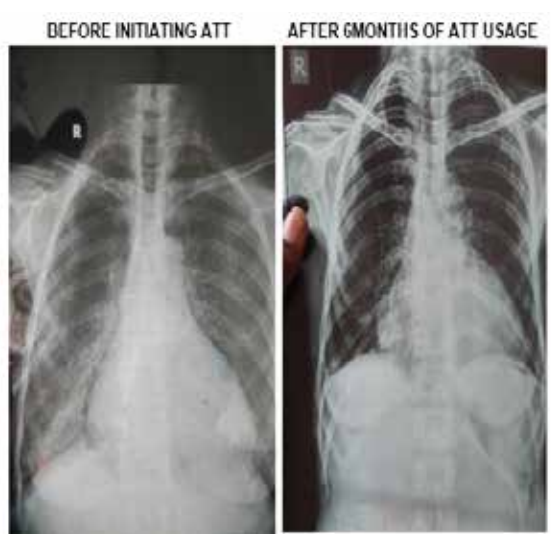
SUMMARY

In the present study, males were more commonly affected than females. Mean age of distribution was 41. Duration of symptoms ranged from 10 days to 3months. Most common symptoms were cough, loss of appetite, loss of weight, fever, and night sweats. Co-morbid conditions encountered were diabetes mellitus(5%), HIV (12.5%)and CKD(2.5%). Cervical lymphadenopathy was found in 7.5% cases. TST was negative in 97.5% cases. Sputum was positive for AFB in 12.5% cases. Most common haematological abnormality was anemia (50%). TB Meningitis was diagnosed in one case.

After initiation of ATT, symptomatic improvement was seen in 92.5% cases and sputum conversion in all the 5 sputum positive cases. Radiological resolution was seen in 67.5% cases after 2months and in 92.5% cases after 6months. Complications encountered were respiratory failure (5%), drug induced hepatotoxicity (2.5%)and iatrogenic pneumothorax (2.5%). The detection of MDR in the tested sample was NIL. The mortality rate was 5%.

CONCLUSION

Miliary tuberculosis is showing a tendency to affect young adults(35-45yrs) and predominantly males. HIV infection also is showing similarity with respect to age and sex. HIV is emerging as an important risk factor in the evolution, progression, and management of disease. The commonest symptoms pertained to respiratory system include fever, cough, loss of appetite, shortness of breath and weight loss.Physical examination revealed lymphadenopathy,hepatomegaly and icterus indicating dissemination.Chest X-Ray is the corner stone for diagnosis. Chest Xray lesions suggestive of pulmonary tuberculosis are complimentary in diagnosing the miliary mottling as tuberculosis. USG Abdomen is useful to detect minimal pleural effusion ,organomegaly, ascites and retroperitoneal nodes suggesting dissemination.Negative Tuberculin test does not exclude the possibility of miliary TB. In geographical areas, where the prevalence of TB is high, when a patient presents with compatible clinical picture and a chest radiograph suggestive of classical miliary pattern, early initiation of ATT can be life saving, keeping in mind the potential lethality of the condition. Measures to confirm the diagnosis can be carried out simultaneously along with initiation of treatment.



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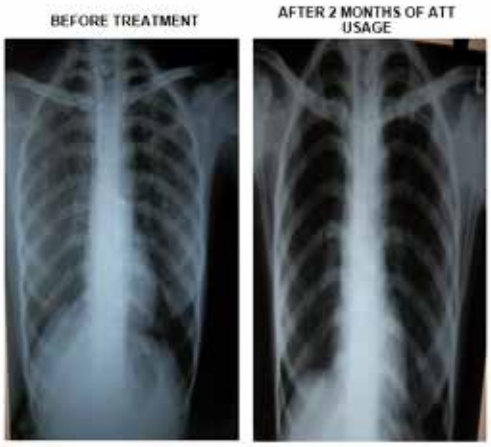

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