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Aretrospective Study of 36 Patients with Lung Abscess

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ABSTARCT: Introduction: Lung abscess is defined as localized area of destruction of lung parenchyma with radiologically detectable opacity with an air fluid level(usually >2 cm in diameter).It is classified as primary and secondary lung abscess.The mortality was higher in the pre antibiotic era , but with the advent of antibiotic therapy the mortality has reduced. Many risk factors are associated with formation of lung abscess. Based on aetiology, the type of causative organism of lung abscess also varies.

Aims & objectives: To study the clinical, radiological and microbiological profile of lung abscess.

Materials and methods: It is a retrospective observational study conducted at Department of Pulmonary Medicine, Andhra Medical College, Visakhapatnam from January 2019 to December 2019. 36 patients included in the study group.

Results: Out of 36 patients ,32 were males and 4 were females. Mean age of study population was 53.3%.Mostcommon symptom was cough with expectoration(91.6%). common risk factor observed was poor oral hygiene(61.1%). Radiologically right upper lobe predominantly involved in 44.4%. Klebsiella was the common organism isolated in 41.6%.Mycobacterium tuberculosis was found in 3 cases. Malignancy observed in one case.

Conclusion: In our study group Lung abscess was common in males with poor oral hygiene, most common symptom was cough with expectoration. Klebsiella was commonest organism isolated. Radiologically right upper lobe predominantly involved.

KEY WORDS: Lung abscess, Klebsiella, cough with expectoration, poor oral hygiene.

I. INTRODUCTION:

Lung abscess is defined as localized area of destruction of lung parenchyma with radiologically detectable opacity with an air fluid level. Air fluid level is usually more than 2 cm in diameter.The classification of lung abscess is based on the duration and cause of the of the process. Acute abscesses are less than 4 to 6 weeks, where as chronic abscesses are of greater duration. Primary lung abscesses usually arise from aspiration, are often caused principally by anaerobic bacteria, and occur in the absence of pulmonary and systemic condition. secondary lung abscesses arise in the setting of underlying condition,such as post obstructive process(e.g: bronchial foreign body or tumour) or systemic process (eg: HIV infection or another immunocompromised condition). The mortality was higher in the pre antibiotic era , but with the advent of antibiotic therapy the mortality has reduced. Many risk factors are associated with formation of lung abscess. Based on aetiology, the type of causative organism of lung abscess also varies.

II. AIMS AND OBJECTIVES

To study the clinical , radiological and microbiological profile of Lung abscess.

III. MATERIALS AND METHODS

It is a retrospective observational study conducted at Department of Pulmonary Medicine, Andhra Medical college, Visakhapatnam from January 2019 to September 2019. Total 36 patients included in the study group.Clinical, radiological, and microbiological data were collected from hospital data and analysed.

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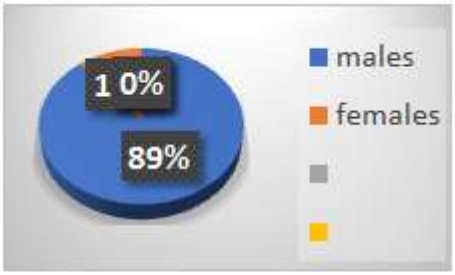
IV. RESULTS:

AGE	No. of patients	%
19-34	4	11.1
35-50	8	22.2
51-64	14	38.8
>64	10	27.7

Table:1 AGE DISTRIBUTION



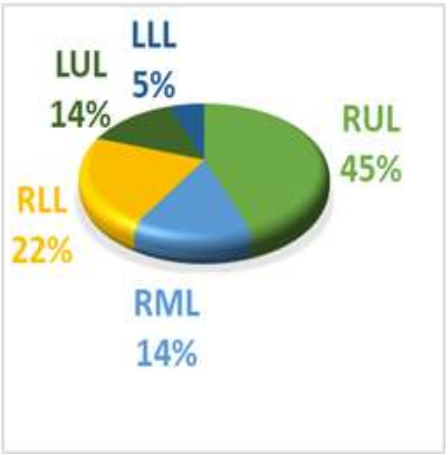
GENDER DISTRIBUTION

SYMPTOMS	No. of patients	%
Cough with expectoration	33	91.6
fever	30	83.3
hemoptysis	20	55.5
clubbing	12	33.3

Table:2 CLINICAL SYMPTOMS

Radiological involvement	no. of patients	%
Right lung		
Upper lobe	16	44.4%
Middle lobe	5	13.8%
Lower lobe	8	22.2%
Left lung		
Upper lobe	5	13.8%
Lower lobe	2	5.5%

Table: 3 RADIOLOGICAL DISTRIBUTION



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Sputum Gram stain	No. of. cases	percentage
Gram positive	2	5.5%
Gram negative	22	61.1%
No organism	12	33.3%

organism	No. of cases	%
Klebsiella	15	41.6
E.coli	5	13.8
Strepto.pneumoniae	33.3	5.5
Pseudomonas	2	5.5
No growth	12	

Table:4 SPUTUM FOR GRAM STAINTable:4SPUTUM FOR CULTURE

Risk factors	no. of patients	%
Poor oral hygiene	22	61.1%
Alcohol	19	52.4%
smoking	16	44.4%
Diabetes	14	38.8%

Table:5 RISK FACTORS

V. RESULTS

In the present study, out of 36 patients,32 patients were males and 4 were females. Age is varied between 19 to 72 years. Mean age of the study population was 53.3%. In our study lung abscess most commonly observed in age group 51-64 years, followed by 65 to 72 yrs Cough with expectoration was the common risk factor observed in 33 cases (91.6%), followed by fever in 30 cases (83.3%), hemoptysis in 20 cases (55.5%), clubbing in 12 cases (33.3%). Radiologically right upper lobe most commonly involved in majority of the patientsi.e in 16 cases (44.4%), followed by right lower lobe in 8 cases (22.2%), right middle lobe involved in 5 cases (13.8%), left upper lobe involved in 5 cases (13.8%), left lower lobe involved in 2 cases (5.5%). Sputum for gram stain and culture sensitivity was done in all patients. Gram negative organism found in majority of the cases i.e in 22 cases (61.1%), gram positive organism in 2 cases (5.5%), no organism was found in 12 cases (33.3%). Sputum culture showed Klebsiella was the most common organism isolated in 15 cases (41.6%), followed by E.coli isolated in 5 cases (13.8%), Streptococcus.pneumoniae in 2 cases (5.5%), pseudomonas in 2 cases (5.5%), no organism isolated in 12 cases (33.3%). Poor oral hygiene was the most common risk factor observed in 61.1%, followed by alcohol in 52.4%, smoking in 44.4%, diabetes in 38.8%. Mycobacterium tuberculosis was found in 3 cases (8.3%). Malignancy was found in one case.

VI. DISCUSSION

A total of 36 patients were included in our study. Mean age of population studied was 53.3%.The incidence of Lung abscess found in our study was more in males. Out of 36, 32 were males and 4 were females.This finding was similar to MM Mohapatra et al study and Bhattacharyya et al study.The most common symptom observed in Lung abscess cases was cough with expectoration followed by fever.In our study cough with expectoration main symptom in 33 cases (91.6%). This finding was consistent with MM Mohapatra et al study and Bhattacharya et al study.

Most common risk factor observed in our study was poor oral hygiene in 22 cases (61.1%) followed by alcohol consumption (52.7%). In Bhattacharyya et al study, poor oral hygiene main

risk factor in 65% of cases. In MM Mohapatra et al , in 28% of cases poor oral hygiene was risk factor. Radiology plays an important role in identifying lung abscess. In our study majority of lung abscesses located on the right lung with upper lobe predominance in 16 cases (44.4%) followed by right lower lobe in 8 cases (22.2%) . In Bhattacharyya et al study out of 120 cases , 75 cases had right upper lobe predominance, in MM Mohapatra et al study out of 46 cases, 23 cases had right upper lobe predominace.

In our study out of 36 patients, in 24 cases culture organism was isolated.No growth observed in remaining 12 cases. Most common organism was found to be Klebsiella in 15 cases (41.6%). This finding was similar to MM Mohapatra et al study, Klebsiella was isolated in 50% cases. But in Bhattacharyya et al study tubercular lung abscess was diagnosed in 25% cases, bacterial cause in 20% cases and majority were Klebsiella(65%). While other studies showed Streptococcus pneumoniae most common organism. Mycobacterium tuberculosis was the cause in 3 cases (8.3%). Malignancy was found in one case(2.7%) case. In the literature it varies between 2 to 25% cases. It is consistent with the study.

Diabetes mellitus was associated with 38.8% cases. In Bhattacharyya et al study it was associated with 27.5% cases. In MM Mohapatra et al study only 8% cases associated with diabetes mellitus.

VII. CONCLUSION

In our study, lung abscess was more common in males 88.8% cases. Lung abscess was commonly observed in the age group 51-64 years. Most common symptom was cough with expectoration in 91.6% cases.Common risk factor was found to be poor oral hygiene in 61.1% cases. Right upper lobe predominately involved in 16 cases (44.4%) out of 36 cases.Sputum culture showed Klebsiella was the commonest organism isolated in 41.6% cases.

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