

Original article:

Study of clinical profile of Bronchiectasis in rural population

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Abstract:

Introduction: With the widespread availability of HRCT it has been realized that bronchiectasis remains a common and important cause of respiratory disease. Bronchiectasis is characterized by mild to moderate airflow obstruction that tends to worsen over time. The most widely known model of the development of bronchiectasis is Cole's "vicious cycle hypothesis".

Material and methods: The study was carried out in Pravara Rural Hospital, constituent of Rural Medical College, Loni. The sample size estimation was carried by the help of expert.

Results: In the present study, 50 cases of bronchiectasis were studied. The observations made during the study are presented below with the analysis.

In the Present Study, majority of the patients were between 51-60 and 61-70 age groups. The mean age for males in the study was 50.83 ± 18.45 years, while for females was 60.64 ± 11.97 years.

Conclusion: Productive cough and dyspnea were most common complaints; and duration of symptoms were more than one year in 42% of patients . The past history of tuberculosis was very helpful in predicting the etiology of bronchiectasis .

Introduction:

With the widespread availability of HRCT it has been realized that bronchiectasis remains a common and important cause of respiratory disease. Bronchiectasis is characterized by mild to moderate airflow obstruction ¹ that tends to worsen over time.² The most widely known model of the development of bronchiectasis is Cole's "vicious cycle hypothesis".³ In this model, Cole proposed that an environmental insult often on a background of genetic susceptibility impaired mucociliary clearance resulting in persistence of microbes in the sinobronchial tree and microbial colonization. The microbial infection causes chronic inflammation resulting in tissue damage and impaired mucociliary motility. In turn this led to more infection with a cycle of progressive inflammation causing lung damage. The current view is that the two factors required for the development of this condition are persistent infection and a defect in host defense. There are no well established animal models of bronchiectasis nor have been studies performed in the early stages of the disease. Bronchiectasis is also a very heterogeneous condition and can be considered the end result of a variety of different factors.⁴

Material and methods:

The study was carried out in Pravara Rural Hospital, constituent of Rural Medical College, Loni. The sample size estimation was carried by the help of expert.

Criteria for Inclusion:

- Patients with signs and symptoms suggestive of bronchiectasis.

- Patients with age more than 12 years.
- Confirmation of diagnosis by radio-imaging study.

Criteria for Exclusion:

- Age less than 12 years.
- Congenital cause.

All patients were explained about the nature of the study and informed consent was taken from every patient.

- History & examination findings were recorded as per proforma.
- Thus, entire data collected after study complied and conclusions are drawn.

Results:

In the present study, 50 cases of bronchiectasis were studied. The observations made during the study are presented below with the analysis.

In the Present Study, majority of the patients were between 51-60 and 61-70 age groups. The mean age for males in the study was 50.83 ± 18.45 years, while for females was 60.64 ± 11.97 years.

In the present study, 76% of male and 24% of female were present. Male to female ratio was found to be 3.16:1

Table No.1: Sex Distribution of bronchiectasis

Sex	Number of patent	Percentage (%)
Male	38	76
Female	12	24

The duration of symptoms ranged from 1 month to more than one year. The duration of symptoms was depicted as follows.

Table No.2: Duration of Symptoms in Bronchiectasis

Duration of Symptoms (months)	No. of cases
1-3	6(12%)
4-6	10(20%)
7-12	13(26%)
>12	21(42%)
TOTAL	50(100%)
Mean \pm SD	14.10 \pm 11.02

Majority of patients of bronchiectasis presented with cough (92%), cough with expectoration (86%) and breathlessness (74%). Other symptoms were: chest pain, fever, hemoptysis, pedal edema.

Table No.3: Presenting symptoms of bronchiectasis

Symptom	Number of patient(n=50)	Percentage
Cough	46	92
Cough with expectoration	43	86
Breathlessness	37	74
Chest pain	16	32
Fever	11	22
Hemoptysis	5	10
Swelling of limbs	11	22

The past history of tuberculosis was present in 48% of patients. Thus, post tubercular bronchiectasis was the commonest etiology identified.

Table no.4: Past H/O pulmonary Tuberculosis in bronchiectasis

Past H/O pul. TB.	No. of cases (n=50)	Percentage (%)
PRESENT	24	48
ABSENT	26	52
TOTAL	50	100

Discussion:

In this study, more males (76%) presented with bronchiectasis than females (24%). Most of the patients had typical clinical manifestations including persistent cough (92%), increasing sputum production (86%) and shortness of breath (76%). 10% of patients presented with mild to moderate hemoptysis. In present study, categorized the risk factors such as tobacco smoking (50%) and exposure to indoor air pollution (28%) were associated with bronchiectasis and their relationship with the clinical presentation of bronchiectasis was evaluated.

The past history of tuberculosis (48%) was commonest in predicting the etiology of bronchiectasis in our study. Pulmonary collapse (18%) was second common etiology identified. Only one case was found to be associated with bronchiectasis i.e. lung abscess, alveolar carcinoma and rheumatoid arthritis. Etiology could not be identified for bronchiectasis in 24% of the cases in our study.

In this study, 76% of patients presented with tachypnea and 66% had clubbing on general examination. Most of patients had barrel shaped chest (86%), decreased chest expansion (88%), coarse crepitation (92%) followed by rhonchi (50%) on chest examination. HRCT is the gold standard for diagnosis and assessment of bronchiectasis; but we could rely on chest x-ray finding in appropriate clinical setting and it is an important tool for diagnosis of bronchiectasis in limited recourses. On chest x-ray, there was unilateral (66%) involvement of lung was more common than bilateral (34%) involvement and cylindrical bronchiectasis was most common type of bronchiectasis in this study. ⁵The cost and availability of HRCT chest is a limiting factor to employ this modality of investigation routinely. Only 30% of HRCT were done. Moreover the radiographic and pathological classification of bronchiectasis into cylindrical (64%), cystic (52%), varicose (12%) and mixed (22%) variety does not add significantly towards determining etiology, treatment or prognosis in individual patients. Most of the patients (64%) presented with cylindrical bronchiectasis. Therefore we suggest CXR with specific findings (honey combing/tram tracks) in appropriate clinical setting as diagnostic in limited resources in developing countries.⁶

Conclusion:

Productive cough and dyspnea were most common complaints; and duration of symptoms were more than one year in 42% of patients . The past history of tuberculosis was very helpful in predicting the etiology of bronchiectasis .

References:

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