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RESEARCH ARTICLE

Hemoptysis: A Prospective Analysis of 110 Cases

Subodh K. Nawal[1]*, Mamta R. Heda[2]

[1]Department of Tuberculosis and Chest Diseases, Sriniwas Institute of Medical Sciences, Mangalore. India.

[2 1]Department of Tuberculosis and Chest Diseases, L.N. Medical College & Research Center, Bhopal. India.

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ABSTRACT

Background: Hemoptysis is one of the commonest manifestations of the various underlying disease. A major problem in managing hemoptysis is the wider spectrum of causative factors. The effective management of hemoptysis depends upon identification of the etiology and localization of the site of bleeding.

Objective: The objective of present study was to validate the relative frequency of different causes of hemoptysis and to identify its various risk factors.

Methods: This 2-year prospective study was carried out on 110 patients presenting with hemoptysis. Routine blood investigations and chest radiographs were done for all patients. Bronchoscopy and HRCT chest was done for selected patients. Results obtained were evaluated.

Results: Male to Female ratio was found to be 2.23:1. A total of 73.63% (n=81) of patients were admitted for the first episode of hemoptysis and 26.36% (n=29) for recurrent hemoptysis. Bronchiectasis was found to be the most common cause of hemoptysis in 34.55% patients, followed by old tubercular lesions in 26.36% of patients. History of blood stained sputum was given by 59 (53.64%) patients, frank hemoptysis was reported by 33 (30%) patients, and 18 (16.36%) patients gave the history of hemoptysis.

Conclusion: Even one episode of hemoptysis should not be ignored and investigated properly. Bronchiectasis was the most common cause of hemoptysis in followed by old tubercular lesions.

Keywords: hemoptysis, etiology, recurrent, bronchiectasis.

1. INTRODUCTION:

Hemoptysis is one of the commonest manifestations to be encountered to a chest physician. From the patients point of view also hemoptysis is thrilling as well as life threatening event. In most of the patients hemoptysis is the first symptom that brings him to consult a chest physician. A major problem in managing hemoptysis is the wider spectrum of causative factors that may result in hemoptysis and huge variations in its reported prevalence on national or international literature[1]. The effective management of hemoptysis depends upon identification of the etiology and localization of the site of bleeding[1].

Hemoptysis is defined as the expectoration of blood derived from the lungs or bronchial tubes as a result of pulmonary or bronchial hemorrhage[2]. It remains thecritical problem for both patient as well as treating physician. It adds psychological and economical burden to the patient. The final outcome of hemoptysis is generally good, but varies according to the etiology and modality of management.

The main objective of present study was to validate the relative frequency of different causes of hemoptysis and to identify its various risk factors.

2. MATERIAL AND METHOD:

The present study was carried out in the Chest OPD of our medical college hospital during two year period from December 2010 to January 2013. This prospective study evaluated 110 patients presenting with the hemoptysis. All the patients were admitted to hospital for further evaluation. A written consent form was signed by the patients who were willing to participate in the study. Those patients who were not willing to sign the consent

*Corresponding author: Subodh K. Nawal | Department of Tuberculosis and Chest Diseases, Sriniwas Institute of Medical Sciences, Mangalore. India |Email: drsubodhnawal@yahoo.in

form were excluded from the study. A questionnaire was filled up from the patient enquiring about various parameters of hemoptysis.

The type and quantity of hemoptysis was recorded by the admitting physician or by the staff nurse during the hospital stay. In this study hemoptysis of more than 200 ml was defined as massive hemoptysis[3, 4]. According to Fidan et al[5], severity of hemoptysis was classified as "mild" (<30 cm^3), "moderate" (30–100 cm^3), "severe" (100–600 cm^3) and "massive" (>600 cm^3). On admission routine investigations were performed- chest radiograph, blood chemistry, coagulation profile etc. Bronchoscopy was carried out and Bronchial lavage was sent for routine culture (for acid-fast bacillus) and cytology (for malignant cells). Transbronchial or endo- bronchial biopsies were done in relevant cases where necessary. HRCT was also performed in certain patients. The etiology of hemoptysis was determined on the basis of all available clinical data, chest HRCT, and bronchoscopic findings.

Data collected was analyzed using Microsoft Excel.

3. RESULTS:

Out of 110 patients included in the study, 69 (62.73%) were males and 31 (28.18%) were females (Male: Female ratio as 2.23:1). The distribution of the patients according to different age groups is depicted in table I.

Age group	Number of patients	Percentage
21-30	8	7.27%
31-40	12	10.91%
41-50	35	31.82%
51-60	41	37.27%
61-70	14	12.72%
Total	110	

Table 1: Distribution of number of patients and their percentage according to age groups.

	Number of patients	Percentage
Smokers	49	44.55%
Ex-smokers	22	20%
Non-smokers	39	35.45%
Total	110	

Table 2: Distribution of patients according to smoking habits

The distribution of patients according to their smoking habits is shown in table II.

Diagnosis	Number of patients	Percentage
Bronchiectasis	38	34.55%
Old pulmonary Tuberculosis	29	26.36%
Active pulmonary Tuberculosis	9	8.18%
Bronchitis	16	14.55%
Carcinoma	3	2.73%
Haemorrhagic Diathesis	3	2.73%
Unknown causes	12	10.91%

Table 3: showing final diagnosis of the patient

A total of 73.63% (n=81) of patients were admitted for the first episode of hemoptysis and 26.36% (n=29) for recurrent hemoptysis.

History of blood stained sputum was given by 59 (53.64%) patients, frank hemoptysis was reported by 33 (30%) patients, and 18 (16.36%) patients gave the history of hemoptysis.

Past history of tuberculosis was present in 29 (26.36%) patients, and 7 (6.36%) had bronchiectasis. Active pulmonary tuberculosis i.e. mycobacterium tuberculosis isolate from sputum was recovered in 9 (8.18%) patients.

Chest radiography was performed in all cases, out of which 81 (73.64%) cases had abnormal radiograph and remaining 29 (26.36%) had normal appearing radiographs. 78 patients had done HRCT, of which 49 had normal report.

Bronchoscopy was performed in total 99 patients; it showed 3 cases each of bronchiectasis and bronchitis.

The final diagnosis of the patient presenting with hemoptysis is shown in table III. It shows bronchiectasis as the most common cause of hemoptysis in 34.55% patients, followed by old tubercular lesions in 26.36% of patients.

4. DISCUSSION:

Hemoptysis is common and potentially serious condition in all parts of the world including India.

The causes of tuberculosis vary in different literature and in different parts of the world. Tuberculosis was reported as an important cause in many literature published previously[6, 7, 8]. Some of previous studies have shown that the most common causes of hemoptysis are lung cancer, bronchiectasis, bronchitis, and infection[9, 10]. In the present study, bronchiectasis was found to be most common cause of hemoptysis in 34.55% of patients. Abal et al[1] also found bronchiectasis as most common cause in 20% of patients. Hirschberg et al[11] also found same findings. MacGuinness et al[12] recorded hemoptysis in 25% bronchiectasis and 16% tuberculosis cases. Fidan et al[5] recorded lung cancer (34.3%) as the most common cause of hemoptysis followed by bronchiectasis (25.0%). The high rate of hemoptysis due to tuberculosis in the present study was probably due to the high prevalence of tuberculosis in our country.

Hemoptysis was commonly(37.27%) found in the age group 51-60 yrs, followed by 41-50 yrs age group (31.82%). Male female ratio in the present study was found to be 2.23:1, concluding males are twice more susceptible to develop hemoptysis than females. Abal et al[1] found it 4.2 times more common in males than in females. Our findings were very similar to those found by Fidan et al[5] (2.72:1).

Smoking is also considered important risk factor in the development of hemoptysis. 44.55% hemoptysis occurred

in smokers and 20% in ex-smokers. Abal et al[1] also found hemoptysis in 40.4% smokers.

Bronchoscopy and HRCT seems to be very valuable tool in the diagnosis of hemoptysis and further bronchoscopy can be used as therapeutic tool also.

The major drawback of our study is that the study was carried out on very little number of patients that may or may not represent the community. The source of the patients whether from urban or rural population is also critical as the causative factors of hemoptysis are clearly different in two groups.

5. CONCLUSION: Hemoptysis is the early but dangerous symptom of underlying disease and should not be ignored. Even one episode of hemoptysis should not be ignored and investigated properly. Bronchiectasis was the most common cause of hemoptysis in followed by old tubercular lesions.

6. REFERENCES:

1. Abal AT, Nair PC and cherian J. Haemoptysis: aetiology, evaluation and outcome a prospective study in a third-world country. Respiratory Medicine. 2001; 95, 548–52.
2. Firth JR. Pulmonary hemorrhage and massive hemoptysis. In: Chernick V, Kendig EL Jr, eds. Kendig's Disorders of the Respiratory Tract in Children. 5th ed. Philadelphia, PA: WB Saunders Company; 1990:966–76.
3. Amirana M, Fraler R, Tirschweli, et al. An aggressive surgical approach to signi®cant haemoptysis in patients with pulmonary tuberculosis. Am Rev Resp Dis 1968; 97: 187-92.
4. Bobrowitz ID, Ramakrishna S, Shim YS. Comparision of medical vs surgical treatment of major haemoptysis. Arch Intern Med 1983; 143: 1343-6.
5. Fidan A, Ozdogan S, Oruc O, Salepci B, Ocal Z and Caglayan B. Hemoptysis: a retrospective analysis of 108 cases. Respiratory Medicine. September 2002; 96, (9); 677-80.
6. Abbott OA. The clinical significance of pulmonary hemorrhage: a study of 1316 patients with chest diseases. Dis Chest 1948; 14: 824-42.
7. Moersch HJ. Clinical significance of haemoptysis. JAMA 1952; 148: 1461-5.
8. Saunders CR, Smith AT, The clinical signi®cance of haemoptysis. *N Engl J Med,* 1952; 247: 790-3.
9. Corder R. Hemoptysis. *Emerg Med Clin North Am*. 2003;21: 421–35.
10. Bidwell JL, Pachner RW. Hemoptysis: diagnosis and management. *Am Fam Physician*. 2005; 72: 1253–60.
11. Hirshberg B, Biran I, Glazer M, Mordechai R. Haemoptysis: aetiology, evaluation and outcome in a tertiary referal Hospital. Chest 1997; 112: 440-4.
12. McGuinness G, Beacher JR, Harkin TJ, et al. Haemoptysis: prospective high resolution CT/broncho-scopic correlation. Chest 1994; 105: 1155-62.

Conflict of Interest: None Declared

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