



## CAUSE OF HEMOPTYSIS IN INPATIENTS IN A TERTIARY CARE HOSPITAL IN SOUTH INDIA

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### ABSTRACT

**AIM:** Aim of the study is to find the causes of hemoptysis in inpatients in a tertiary care hospital in south India.

**METHODS AND MATERIAL:** Retrospective study. case sheets of Inpatients either admitted to the thoracic medicine department for hemoptysis and inpatients who later developed hemoptysis were included in the study irrespective of the amount of hemoptysis.

**RESULTS:** pulmonary tuberculosis constitutes 78.26% with sequelae patients constituting 52.17% and active case 25%. Other causes such as bronchiectasis, COPD-chronic bronchitis, pneumonia, carcinoma lung and ILD constitute 10.86%, 5.43%, 2.17%, 2.17% and 1.08% respectively.

**CONCLUSION:** The most common cause of hemoptysis is pulmonary tuberculosis(active and sequelae). Among the pulmonary tuberculosis patients post tuberculous sequelae is the common cause. This followed by bronchiectasis, COPD-chronic bronchitis, pneumonia, carcinoma lung and interstitial lung disease.

**KEYWORDS :** Hemoptysis, pulmonary tuberculosis, sequelae, bronchiectasis

### INTRODUCTION:

Hemoptysis is one of the cardinal symptoms of respiratory system. It is defined as expectoration of blood from respiratory tract. It may arise from any part of airways that is from glottis to alveoli. It usually arises from bronchial artery which accounts for more than 90% of the cases and pulmonary artery being the source in the rest.<sup>1</sup> Severity of hemoptysis is classified based on the amount of blood expectorated in 24h. it is classified as mild(less than 30ml), moderate(31-100ml), severe(>100-600ml) and massive.<sup>2</sup> Massive hemoptysis is defined as hemoptysis of 100 to 600ml over 24hr with respiratory or hemodynamic compromise.<sup>3</sup> The mortality in massive and non-massive hemoptysis varies, it is 80% and 7-30% respectively. Hemoptysis is a common respiratory symptom and pulmonary tuberculosis being the common cause especially in tuberculosis endemic countries like India.

The aim of our study is to ascertain the common causes of hemoptysis among inpatients who were treated in the thoracic medicine Hospital attached to Kilpauk medical college – Government Thiruvooteswaran hospital of thoracic medicine, Otteri.

### METHODOLOGY

This is a retrospective study. All inpatient case sheets from January 2020 to march 2021 (study period of 15months) where analysed and those patients who had hemoptysis at presentation or developed hemoptysis after admission were included in this study. The demographic data of the patient such as name, age, sex and address were collected. Then their presentation, treatment and outcome were analysed. The quantum of hemoptysis at presentation were taken into account for classifying into mild, moderate, severe and massive hemoptysis. All treatment methods and investigational methods were properly recorded for patients included in the study. The diagnosis was based on clinical history, examination, radiological examination such as chest xray, CT chest and other investigations including throat swab of covid rt pcr, sputum AFB, sputum genexpert, sputum line probe assay, sputum culture and sensitivity, sputum gram stain and bronchoscopic findings.

### RESULTS

92 patients were included in the study of which males 72(78.26%) and females 20(21.74). The mean age of the participants were 51.63y (range 16- 78). Of the 92 patients mild cases constituted 31(33.69%), moderate 31(33.69%), severe 23(25%) and massive 7(7.6%). Among the etiology pulmonary tuberculosis(both active and sequelae) constituted 72 cases(78.26%) this was followed by bronchiectasis which

constituted 10 cases (10.86%). Other causes were COPD-chronic bronchitis, pneumonia, carcinoma lung and interstitial lung disease secondary to systemic sclerosis which were 5cases (5.43%), 2cases(2.17%), 2cases(2.17%) and 1case (1.08) respectively.

In the pulmonary tuberculosis patients of 72, active cases constituted 23(25%) the sequelae cases were 48(52.17%) and one case(1.08%) of retreatment where the patient had two causes for hemoptysis one was aspergilloma and consolidation with sputum AFB positive.

In this study all active pulmonary tuberculosis were microbiologically positive. Among the active pulmonary tuberculosis patients new cases constituted 11 (11.95) and retreatment cases, inh mono resistant cases and mdr cases constituted 9(9.78), 2(2.16) and 3(3.24%) respectively.

Out of the 48 cases of pulmonary tuberculosis sequelae patients with fibrosis/fibrocavity were 18 (19.56%) followed by bronchiectasis, aspergilloma, copd-chronic bronchitis which were 14(15.21%), 13(14.13%) and 3(3.24%) respectively.

Of the 23 severe cases 22 were caused pulmonary tuberculosis and one was caused by bronchiectasis. Among the 7 cases of massive hemoptysis 4 were due to pulmonary tuberculosis and 3 were due to bronchiectasis.

**Table 1: cause of hemoptysis**

Cause	Number(percentage)
Pulmonary tuberculosis	72(78.26%)
1.Pulmonary sequelae	48(52.17%)
2. active cases	23(25%)
3.Pulmonary seq/active case	1(1.08%)
Bronchiectasis	10(10.86%)
COPD-chronic bronchitis	5(5.43%)
Pneumonia	2(2.17%)
Carcinoma lung	2(2.17%)
Interstitial lung disease	1(1.08%)
total	92

**Table 2: cause and sex distribution**

Cause	Male	Female
Pulmonary tuberculosis	57	15
Bronchiectasis	7	3
COPD-chronic bronchitis	4	1
Pneumonia	2	0
Carcinoma lung	2	0

ILD	0	1
total	72	20

**Table 3: sex distribution and severity**

Severity	Male	female	total
Mild	21	10	31
Moderate	25	6	31
Severe	19	4	23
Massive	7	0	7
total	72	20	92

**Table 4: grading of hemoptysis according to cause**

Cause	Mild	Moderate	Severe	Massive
Pulmonary tuberculosis	23	23	22	4
Bronchiectasis	1	5	1	3
COPD-chronic bronchitis	2	3	0	0
Pneumonia	2	0	0	0
Carcinoma lung	2	0	0	0
ILD	1	0	0	0
Total	31	31	23	7

**Table 5: Details of active pulmonary tuberculosis**

Type of active PTB	Mild	Moderate	Severe	massive	total
New case	6	2	3	0	11
Retreatment case	3	5	1	0	9
INH mono resistant	0	1	1	0	2
MDR	1	1	1	0	3
Total	10	9	6	0	25

**Table 6: Details of Pulmonary sequelae**

Type of lesion	Mild	Moderate	Severe	Massive	total
Fibrosis/fibrocavity	7	5	4	2	18
Bronchiectasis	1	5	6	2	14
Aspergilloma	3	4	6	0	13
COPD-chronic bronchitis	2	1	0	0	3
total	13	15	16	4	48

**DISCUSSION**

Causes of hemoptysis includes infection, neoplasm, cardiovascular diseases, trauma, hematological and immunological causes<sup>4</sup>. In developing countries like India pulmonary tuberculosis is the commonest cause of hemoptysis.<sup>6,7</sup> In the study done in 1960 by Rao concludes that tuberculosis is the most commonest cause of hemoptysis.

Even though pulmonary tuberculosis is still the commonest cause there is a change in the scenario, this is evident by comparing the study done at Department of Pulmonary Medicine, Chatrapati Sahuji Maharaj Medical University (formerly King George's Medical College), Lucknow, India<sup>6</sup> in the period 1996 to 2002 and that conducted at PGI, Chandigarh in the year 2017.<sup>7</sup> In the study conducted at Lucknow in 1996 to 2002 states that among pulmonary tuberculosis patient active cases are the commonest cause of hemoptysis whereas in the study conducted in PGI, Chandigarh in the year 2017 states that pulmonary tuberculosis sequelae as the common cause of hemoptysis.

In our study too the commonest cause for hemoptysis among pulmonary tuberculosis patients is sequelae which constitutes 52.7% and active cases constitutes 25% is second common cause.

In one retreatment case of pulmonary tuberculosis both sequelae feature of aspergilloma and active features of consolidation and microbiological positivity was found

The other causes were bronchiectasis, COPD-chronic bronchitis, pneumonia, carcinoma lung and ILD which constitute 10.86%, 5.43%, 2.17%, 2.17% and 1.08% respectively.

In this study only one case of interstitial lung disease reported which was a case of 65year old female, known case of systemic sclerosis with NSIP presented with mild hemoptysis

**CONCLUSION**

Pulmonary tuberculosis ( both active and sequelae) is the commonest cause of hemoptysis. Among pulmonary tuberculosis patient sequelae constitutes the common cause of hemoptysis. Second most common cause of hemoptysis is Bronchiectasis. Other causes were COPD- chronic bronchitis, pneumonia, carcinoma lung and interstitial lung disease.

**REFERENCES**

1. Cahill BC, Ingbar DH. Massive hemoptysis. Assessment and management. Clin Chest Med 1994;15:147-67.
2. Ozgöl MA, Turna A, Yildiz P, Ertan E, Kahraman S, Yilmaz V. Risk factors and recurrence patterns In 203 patients with hemoptysis Tuberk Toraks. 2006;54:243-8
3. Thompson AB, Teschler H, Rennard SI. Pathogenesis, evaluation, and therapy for massive hemoptysis. Clin Chest Med. 1992;13:69-82.
4. Fishman's pulmonary disease and disorders. 5<sup>th</sup> edition
5. Rao P. Hemoptysis as a symptom in a chest clinic. Indian J Chest Dis 1960;2:219.
6. Lessons from patients with hemoptysis attending a chest clinic in India. Rajendra Prasad, Rajiv Garg, Sanjay Singhal, and Piyush Srivastava. Ann Thorac Med. 2009 Jan-Mar; 4(1): 10-12. doi: 10.4103/1817-1737.43062.
7. Etiology and outcome of moderate-to-massive hemoptysis: Experience from a tertiary care center of North India. Ashish Bhalla, Ashok Kumar Pannu, Vikas Suri, Department of Internal Medicine, Postgraduate Institute of Medical Education and Research, Chandigarh, India. Year : 2017 | Volume : 6 | Issue : 3 | Page : 307-310.