

## To study the Prevalence and Pattern of Haemoptysis in Histopathologically proven cases of Lung cancer and its relation with various Histopathological types of malignancy

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### Abstract

**Background:** Haemoptysis is a common symptom of lung cancer. However its correlation with the histological proven cases of lung malignancy is poorly understood. This study describes the pattern and prevalence of haemoptysis in lung malignancy related to various histopathological types.

**Materials and Methods:** This is a retrospective study conducted in MGMCH, Jaipur in 100 patients of histopathologically proven cases of lung cancer between July 2016 to July 2017 showing profile of haemoptysis and its correlation with various histopathological types of lung malignancy

**Results:** Of 100 patients of lung cancer, 82% were males and 18% females. Prevalence of haemoptysis was 29% out of which 62.06% of cases were having mild, 34.50% moderate and 3.4% severe haemoptysis. The most common histological type of lung cancer was squamous cell carcinoma (59%) followed by small cell (28%), adenocarcinoma (10%), large cell carcinoma (1%) and poorly differentiated (2%). Majority of cases of haemoptysis (72.4%) were squamous cell carcinoma, 24.13% small cell and 3.4% adenocarcinoma.

**Conclusion** – Haemoptysis is not an uncommon symptom in lung cancer present in about 1/3<sup>rd</sup> cases and majority complains of mild haemoptysis. Most common (3/4<sup>th</sup>) is squamous cell carcinoma.

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### I. Introduction

Lung cancer is one of the most common cause of cancer related death worldwide. Its incidence is 13 % and accounts for 19 % of all cancer related deaths worldwide<sup>1</sup>. In India, its incidence is 6.9% and accounts for 9.3 % of all cancer related deaths. Upto 40 yrs of age small cell carcinoma predominates and has less association with smoking. After 40 years squamous cell carcinoma is commonest in smokers and Adenocarcinoma in non-smokers. Lung cancer patients may be asymptomatic or presents with symptoms which may be local or metastatic i.e chest pain, coughing, hemoptysis, breathlessness, hoarseness of voice, wheezing, anorexia, weight loss, headache, seizures etc.<sup>2,3</sup>

Haemoptysis is defined as coughing/ expectoration of blood from lungs / bronchial tubes. In Developing world, Pulmonary TB is the most common cause of haemoptysis. Other causes include Chronic Bronchitis, Bronchiectasis, Lung malignancy, Cardiovascular disorders, Pulmonary infarction etc. In Developed countries haemoptysis is common in Carcinoma Lung, Chronic Bronchitis, Pulmonary TB . Severity of haemoptysis is confusing although arbitrarily divided into mild, moderate or severe depending on amount of blood, duration & frequency of bleeding. Mild – less than 100ml/day or blood streaks in sputum, Moderate-between 100-400 ml/day, Severe- more than 400 ml/day.<sup>4</sup>

Haemoptysis is common symptom of lung cancer. However its relation with histopathological cases of lung malignancy is poorly defined in reported studies. This study describes the pattern and prevalence of haemoptysis in lung malignancy and relation to various histopathological types.

## II. Materials And Methods

Our hospital is located at Jaipur in Rajasthan state which cater both urban and rural population from all over state even including other adjoining states. It is also a referral centre for higher medical services. This study is a retrospective study carried out at Department of Respiratory Medicine, MGMCH Jaipur in 100 patients of histologically proven lung cancer during July 2016 to July 2017. Systemically records of age, gender profile, hemoptysis in patients of histopathologically diagnosed cases of lung malignancy were studied. Tissue diagnosis of lung cancer were based on biopsy, brushing, Trans Bronchial Needle Aspiration (TBNA) obtained through Fibre Optic Bronchoscopy or USG/CTguided FNAC of lung. Severity of haemoptysis classified as Mild- less than 100ml/day or blood streaks in sputum, Moderate- between 100-400 ml/day and Severe- more than 400 ml/day.

### INCLUSION CRITERIA

1. All the cases irrespective of gender and age who were finally diagnosed by histopathology were analysed .
2. Detail information were taken of haemoptysis and its profile and relation with various histopathological types of lung malignancy.

### EXCLUSION CRITERIA

1. Patients who were diagnosed lung malignancy clinico-radiologically and only by malignant cells in the sputum/bronchial aspirate/tissue.

## III. Results

In the present study, 100 histologically diagnosed cases of lung cancer were studied and analysed. Of 100 cases 82(82%) were males and 18(18%) females (Table no. 1). 29 patients presented with haemoptysis out which prevalence in males were 25(30.4%) and 4(20.2%) in females (Table no. 2). Majority of the cases were mild 18(62.10%) followed by moderate 10(34.50%) and least 1(3.40%) severe (Table no. 3). Among cases of haemoptysis maximum 21(72.40%) were of squamous cell carcinoma, 7(24.20%) of small cell carcinoma, 1(3.40%) of adenocarcinoma and no hemoptysis in large cell and poorly differentiated carcinoma (Table no. 5). Prevalence of haemoptysis in various histopathological types of lung cancer were as majority 21 (35.60%) in squamous cell carcinoma followed by small cell cancer 7(25%) and least 1(1%) in adenocarcinoma, however large cell carcinoma and poorly differentiated carcinoma showed no haemoptysis (Table no. 6).

**Table 1.** Gender profile of cases of diagnosed Lung Cancer

Gender	No. of cases	(%)
Male	82	82.00
Female	18	18.00
Total	100	100.00

**Table 2.** Prevalence of haemoptysis in relation to Gender in proven cases of lung malignancy

Gender	No. of Cases of Ca Lung	Haemoptysis Present	
		No.	%
Male	82	25	30.40
Female	18	4	22.20
Total	100	29	

**Table 3.** Severity of haemoptysis in cases of proven lung cancer cases

Haemoptysis Severity	No.	%
Mild	18	62.10
Moderate	10	34.50
Severe	1	3.40
Total	29	100

**Table 4.** Histopathological types of Lung malignancy observed

Diagnosis	No.	%
Squamous Cell Carcinoma	59	59.00
Small Cell Carcinoma	28	28.00
Adeno Carcinoma	10	10.00
Large Cell Carcinoma	1	1.00
Poorly Differentiated	2	2.00
Total	100	100.00

**Table 5.** Prevalence of haemoptysis with histopathological types of malignancy

Type of Malignacy	Presence of Haemotysis	%
Squamous Cell Carcinoma	21	72.40
Small Cell Carcinoma	7	24.20
Adeno Carcinoma	1	3.40
Large Cell Carcinoma	0	0.00
Poorly Differentiated	0	0.00
Total	29	100.00

**Table 6.** Prevalence of hemoptysis in various histopathological types of lung malignancy

Type Of Malignancy	No.	Haemoptysis Present	%
Squamous Cell Carcinoma	59	21	35.60
Small Cell Carcinoma	28	7	25.00
Adeno Carcinoma	10	1	1.00
Large Cell Carcinoma	1	0	0.00
Poorly Differentiated Carcinoma	2	0	0.00

#### IV. Discussion

In our study about 3/4<sup>th</sup> cases were males. Similarly, Jindal et al.(1982)<sup>5</sup> and Gupta et al(1998)<sup>6</sup> showed higher male predominance. In our study Haemoptysis is present in more than 1/4<sup>th</sup> (29%) cases of lung cancer. Similar results i.e haemoptysis in 27.08% cases had been reported by studies conducted by Jindal et al. (1982)<sup>5</sup> and Baburao et al(2015)<sup>7</sup>. Our study revealed more cases of hemoptysis in males (30.4%) as compared to females (22.2%). Majority of cases of lung cancer in our study presented with mild haemoptysis 2/3<sup>rd</sup> ( 62.06) and moderate 1/3<sup>rd</sup> (34.5%) haemoptysis and least (3.4%) with severe. Prasad et al (2009)<sup>4</sup> and Singh S (2017)<sup>8</sup> also supported similar results. Our study revealed commonest histology i.e squamous cell carcinoma (59%) followed by small cell carcinoma (28%) then adenocarcinoma (10%) least large cell (1%) which is consistent with the previous Indian studies done by Behra D (2004)<sup>9</sup> and other studies. However some recent study done by Malik P S (2015)<sup>2</sup> show adenocarcinoma has surpassed squamous in western and asian countries due to changing smoking habits, particularly filtered cigarettes; moreover, there is also increasing incidence of lung cancer in females and non smokers . Among cases of haemoptysis of various histological types of lung malignancy 3/4<sup>th</sup> were Squamous cell(72.4%), followed by Small cell(24.20%), least Adenocarcinoma (3.4%). Prevalence of haemoptysis is maximum in Squamous cell (35.6%) followed by Small cell (25%) and least in Adeno carcinoma(1%).

#### V. Conclusion

In our study we found that haemoptysis is not an uncommon symptom and present in 29% cases of various histopathological types of lung malignancy. In 90% of case, most common presentation of haemoptysis is mild to moderate. Squamous cell carcinoma (35.40%) is most common histological type presented with haemoptysis. Central lung cancers present with more common symptom of haemoptysis as compared to peripheral lesions.

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