

## Pulmonary tuberculosis- Misdiagnosis of primary lung cancer in a high TB burden setting.

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### INTRODUCTION & AIM

Globally over 2 million new cases of lung cancer are diagnosed annually representing about 11% of all cancers. In males and females, it is the leading cause of cancer-related deaths in 87 and 26 countries respectively. Only 1% of lung cancer deaths are reported in Africa. In Zimbabwe lung cancer accounts for less than 4% of the annual cancer incidence. Investigating patients for probable lung cancer needs a high index of suspicion by physicians practicing in a high HIV/TB burden country and requires specialized radiology, pathology, surgery and oncology services for diagnosis & treatment. In such a setting misdiagnosis and/or delayed diagnosis of primary lung cancer is highly probable. As Africa goes through the disease burden transitional phase, with an increasing number of NCDs, there is need to realign our diagnostic pathways for greater efficiency. This study was carried out to determine the prevalence of initial misdiagnosis of primary lung cancer as pulmonary tuberculosis and the resultant time delay in establishing a histological diagnosis in Zimbabwe.

### METHOD

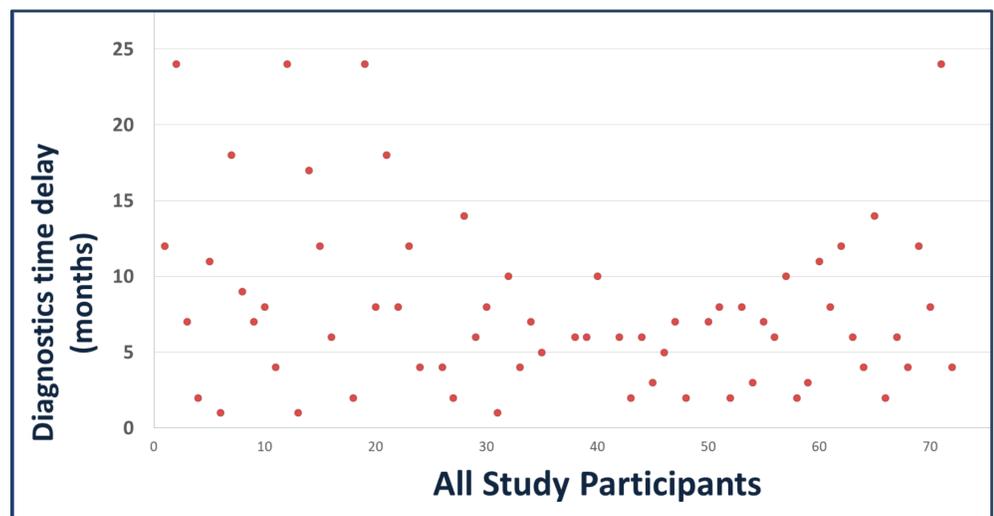
A retrospective descriptive study reviewing medical records of patients who presented with pathologically confirmed primary lung cancer from 1 January 2014 to 31 December 2018 was done at Parirenyatwa Group of Hospitals Radiotherapy and Oncology Centre. This is the largest cancer treatment centre in Zimbabwe. Demographic, clinico-pathological and diagnostic delay time interval data was extracted and analyzed. The diagnostic time delay was defined as the time interval between initial presentation to any health centre to the point a histological diagnosis is obtained.

Characteristics	Frequency (%)
<b>Sex</b>	
Male	43 (58.9)
Female	30 (41.1)
<b>Age group (in years)</b>	
15-40	6 (8.2)
41-60	27 (36.9)
61-80	39 (53.4)
>80	1 (1.4)
<b>Primary Residence</b>	
Urban	37 (56.1)
Rural	29 (43.9)
<b>Tobacco Smoker</b>	
No	33 (45.3)
Yes	34 (46.5)
No record	6 (8.2)
<b>Pulmonary TB diagnosis in the past 12 months</b>	
No	34 (46.6)
Yes	39 (53.4)
<b>HIV status</b>	
Negative	35 (49.3)
Positive	14 (19.7)
Unknown	22 (31)
<b>Known family history of cancer</b>	
No	65 (89)
Yes	8 (11)
<b>High risk occupation for lung cancer</b>	
No	67 (91.8)
Yes	6 (8.2)



### RESULTS & DISCUSSION

In total 73 patients were eligible for review and males accounted for 58% of all new cases. At diagnosis, 77% of patients had stage IV disease. The median diagnostic time delay was 8.37 months. A pulmonary TB diagnosis in the preceding 12 months before a diagnosis of primary lung cancer was identified in 53% of patients. Only 11 patients (15.1%) had lung cancer diagnosed within 3 months of the initial presentation to a health care centre. A preceding pulmonary TB diagnosis was significantly associated with a diagnostic time delay of >7months( $p= 0.001$ ), however, no such association was noted with smoking history ( $p=0.410$ ), and HIV status ( $p=0.371$ ).



Scatter chart showing the diagnostic time delay experienced by each patient reviewed in the study

### CONCLUSION

A history of initial misdiagnosis of lung cancer as pulmonary TB is common among cases presenting at Zimbabwe's largest cancer centre. This initial misdiagnoses results in significant delays in patients receiving correct treatment and contributes towards underdiagnoses of lung cancer.

### REFERENCES

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