Understanding Physician Barriers in the Management of Lung Cancer in Nepal. Can Educational Intervention Make a Difference?

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ABSTRACT

Background: Lung cancer is the leading cause of cancer morbidity and mortality in Nepal. A majority of patients present with advanced stage and some patients are never referred to an oncologist. Many factors contribute to this, including lack of oncology training and exposure. Herein, we evaluated the physician related factors contributing to the current scenario of lung cancer treatment in Nepal.

Methods: A prospective survey in Internal Medicine programs across Nepal was performed. A structured, self-administered questionnaire focusing on physician's behavior, practice, and attitude towards lung cancer was used.

Results: Total 74 participants responded to the survey questionnaire. Only 3 out of 10 Internal Medicine programs had a compulsory oncology rotation. Multiple factors contributed to delay in diagnosis of lung cancer. 66 participants (91.6%) responded that they gave empirical anti-tubercular drugs (ATT) to patients with a non-resolving consolidative mass before they began evaluation for lung cancer; 22 % deferred CT scan before ATT. Multiple courses of antibiotics was a common practice in 62.5% participants. Misattribution of existing symptoms was common. 83.3% agreed that they treated smokers with respiratory symptoms initially as COPD with no consideration of lung cancer while 72.2% did not consider lung carcinoma in a middle-aged, never-smoker female with non-resolving consolidative mass. We also discovered that 36.1% of participants don't refer elderly patients with lung cancer to an oncologist.

Conclusion: Lung cancer remains a neglected disease in Nepal. There is an urgent need to overcome physician related barriers by oncology education for physicians and in training programs.

Keywords: *lung cancer; physician barrier; delay diagnosis.*

INTRODUCTION

Lung cancer is the leading cause of cancer morbidity and mortality in Nepal accounting for 11% of cancer cases and 15% of cancer deaths annually. Due to the lack of screening program, more than two-third of patients present with advanced stages. Both patient and physician related factors contribute to the delayed presentation. Among physician related factors, diagnostic delay, lack of prompt referral and nihilistic attitude seem to be most important. Potentially, a lack of oncology training and exposure contributes to this. Time from diagnosis to treatment is directly associated with survival outcomes in lung cancer. Diagnosis of lung cancer at advanced stages can result in missed treatment opportunities, worse outcomes, and higher health care costs which needs to be addressed. Thus, this study evaluated the physician related factors contributing to the current scenario of lung cancer treatment in Nepal and whether oncology education could make a difference.

METHOD

This was a prospective cross-sectional study aimed to evaluate the various physician related factors leading to delay in management of lung cancers. It was conducted after taking institutional approval from National Academy of Medical Sciences (NAMS), Bir hospital. The survey among residents and faculty from 10 medical colleges with Internal Medicine programs across Nepal was performed from April 2019 to June 2019. A structured, self-administered questionnaire focusing on causes leading to delay in management of lung cancer was used. The validity of the questionnaire was done by the expert oncologist from Department of Clinical Oncology, NAMS as well as Department of Medicine, the University of Kansas Medical Center, USA. The Reliability was assessed using a test-retest method in which the questionnaire was distributed among 10 Internal Medicine residents and faculty of NAMS. These participants were not included in the study. The questionnaire was distributed by e-mail to

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each site and a printed copy given to participants. The study's objectives were explained to the participants and written informed consent was collected from them before their inclusion in the study. The identity of the respondents was kept confidential to ensure privacy and encourage accurate responses. Participants who gave consent to participate in the survey were given printed questionnaire. The data collected was entered in Microsoft Excel Software and analysis performed using SPSS version 20. Frequencies/percentages were calculated for categorical variables and measures of central tendency were calculated for quantitative variables. Descriptive statistics such as frequency and cross tabulation were calculated for selected variables. Paired t- test was used to evaluate whether there was the difference in response for participants with or without exposure to oncology rotation in regards to management of lung cancers.

RESULTS

A total of 74 participants responded to the survey questionnaire. The study population had male preponderance (85%, n=74). Most of the respondents were residents (89.2%). Only 3 out of 10 Internal Medicine programs had a compulsory oncology rotation in their residency program. Only 22 participants (30%) had completed oncology rotation during their residency program as shown in Table 1.

Table 1. Demographic characteristics of the study participants. (n=74)	
Variables	**Frequency (%)**
Sex	
Male	63(85%)
Female	11(15%)
Age (Years)	
< 25	2(2.7%)
25-30	48(64.9%)
>30	24(32.4%)
Designation	
Year 1 Resident	27(36.5%)
Year 2 Resident	22(29.7%)
Year 3 Resident	17(23%)
Practicing Physician/Faculty	8(10.8%)
Oncology rotation during residency	
Yes	22(30%)
No	52(70%)

Multiple factors contributed to delay in diagnosis of lung cancer as shown in Figure 1. Total of 66 participants (91.6%) responded that they gave empirical anti-tubercular drugs (ATT) to patients with a non-resolving consolidative mass before they began evaluation for lung cancer while 22 % deferred CT scan before ATT. Multiple courses of antibiotics was a common practice in 62.5% participants. Misattribution of existing symptoms was common. 83.3% agreed that they treated smokers with respiratory symptoms initially as COPD with no consideration of lung cancer while 72.2% did not consider lung carcinoma in a middle-aged, never-smoker female with non-resolving consolidative mass.
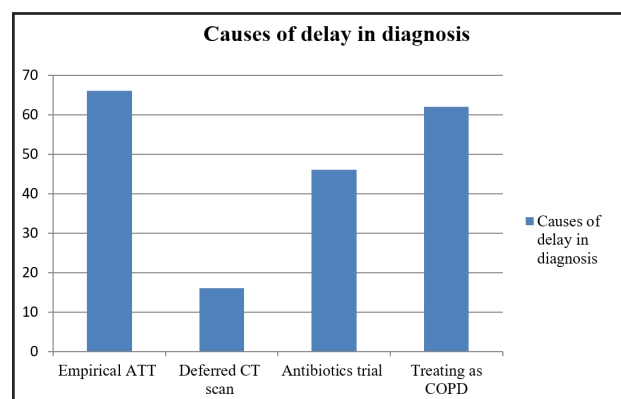

Figure 1. Factors leading to delay in diagnosis of lung cancer.

A paired t-test was used to analyze the responses among participants with oncology education during their residency with those who did not have an oncology rotation and was statistically significant (p= 0.001). We also discovered that 36.1% of participants don't refer elderly patients with lung cancer to an oncologist because they think lung cancer treatment is usually futile, toxic and does not help the patient.

DISCUSSION

Lung cancer being the most common cancer in Nepal poses a significant healthcare burden due to high morbidity and mortality associated. Physician plays vital role in diagnosis of the patients with lung cancer which in turn affects the outcome and well as healthcare burden. Physician related barriers in management of lung cancer further complicate these challenges in Nepal. Multiple factors contributed to delay in diagnosis of lung cancer. Total 66 participants

Table 2. Difference In practice among participants in management of lung cancer in relation to oncology rotation and exposure in training.

Variable	Frequency (%)	p-value
Defer Referral of an elderly lung cancer patient for treatment		
Oncology rotation done	3 (11.1)	<0.01
Oncology rotation not done	24 (88.9)	
Consider lung cancer in middle aged female with non-resolving consolidative mass		
Oncology rotation done	18 (24.3%)	<0.01
Oncology rotation not done	3 (4%)	
Practice biopsy over FNAC in lung cancer		
Oncology rotation done	20 (27.1)	<0.01
Oncology rotation not done	49(66.2)	
Defer CT scan until trial of ATT		
Oncology rotation done	2(2.7)	<0.01
Oncology rotation not done	14(18.9)	

(91.6%) responded that they gave empirical anti-tubercular drugs (ATT) to patients with a non-resolving consolidative mass before they began evaluation for lung cancer which is similar to studies in India., Misdiagnosis accounted for significant delay in referral for confirmation of diagnosis and the most common misdiagnoses are tuberculosis. In these studies, 17% and 22% of patients respectively with bronchogenic carcinoma were wrongly diagnosed initially as pulmonary tuberculosis and were prescribed ATT by the physicians. 22 % of the respondents in our study deferred CT scan for workup of the patient before starting ATT which seems to be a common practice in Indian subcontinent due to the high endemicity of tuberculosis and a shortage of diagnostic facilities like Ct scan for confirming the diagnosis. Other study in Sweden has shown physician related barriers in lung cancer diagnosis was also due to the inadequacy of medical services, delay in referrals and in the performance of subsidiary tests. Multiple courses of antibiotics were a common practice in 62.5% participants. Misattribution of existing symptoms was common. 83.3% agreed that they treated smokers with respiratory symptoms initially as COPD with no consideration of lung cancer while 72.2% did not consider lung carcinoma in a middle-aged, never-smoker female with non-resolving consolidative

mass. In the study by Yogeesha et al up to 52% of the patients with lung cancer were misdiagnosed as having pneumonia at the time of presentation leading to delay diagnosis of lung carcinoma and poor outcome. Similarly in the study by Pereira et al from Brazil, lung cancer patients were initially misdiagnosed as Pneumonia, chronic bronchitis and tuberculosis in 20%, 9% and 8% respectively. In our study we observed that 36.1% of participants didn't refer elderly patients with lung cancer to an oncologist because they think lung cancer treatment is usually futile, toxic and does not help the patient. It is similar to the report by Pramit et al in which lung cancer treatment patterns varied significantly among elderly patients. Despite the availability of different treatment options, many patients did not receive any treatment. The majority of these patients had late-stage disease at presentation. Our study also found a statistically significant difference in lung cancer diagnostic approach in relation with the oncology exposure during residency training which is similar to other literature. Observed improvements in the perception of oncology and appropriate approach to lung cancer can be achieved by exposure to oncology in internal medicine rotation. So, oncology education during internal medicine residency might be one of the effective solutions in changing the physician related barrier in lung cancer management which will change the morbidity and mortality related to lung cancer in Nepal.

Limitations: We acknowledge that there are limitations to this study. Firstly, the sample size is relatively small. The different responses will be based on the year of residency of the students and the faculties are different which may have affected the results. However, our study emphasizes the predominant physician related barriers in management of lung cancer in Nepal which might be a base for advocacy for need of standardized oncology training in residency program for early diagnosis and treatment of cancers including lung cancer.

CONCLUSION

Lung cancer remains a neglected disease in Nepal.

There is an urgent need to overcome physician related barriers by oncology education for physicians and in training programs for early diagnosis and treatment of lung cancer for potential improvement in survival and quality of life in patients with lung cancers.

Conflict of interest: None

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