

Defaulters among lung cancer patients in a suburban district in a developing country

T. H. Ng, S. H. How, Y. C. Kuan, A. R. Fauzi

Department of Internal Medicine, Kulliyah of Medicine, International Islamic University Malaysia, Kuantan Pahang, Malaysia

Address for correspondence:

Dr. Ng Teck Han,
Assistant Professor,
Kulliyah of Medicine,
International Islamic University
Malaysia, P.O Box
141, 27510 Kuantan
Pahang, Malaysia.
E-mail: ngteckhan@hotmail.com

Submission: 17-05-11
Accepted: 01-08-11

Abstract:

INTRODUCTION: This study was carried out to determine the prevalence, patient's characteristic and reasons for defaulting follow-up and treatment among patients with lung cancer.

METHODS: Patients with histologically confirmed lung cancer were recruited. Patient's detailed demographic data, occupation, socioeconomic status, and educational level of both the patients and their children were recorded. Defaulters were classified as either intermittent or persistent defaulters. By using Chi-square test, defaulter status was compared with various demographic and disease characteristic factors. The reasons for default were determined.

RESULTS: Ninety five patients were recruited. Among them, 81.1% patients were males; 66.3% were Malays. The mean age (SD) was 60 ± 10.5 years. About 46.3% of the patients had Eastern Cooperation Oncology Group (ECOG) functional status 0/1 and 96.8% of the patients presented with advanced stage (Stage 3b or 4). Overall, 20 patients (21.1%) were defaulters (35.0% intermittent defaulters; 65.0% persistent defaulters). Among the intermittent defaulters, 8 patients defaulted once and one patient defaulted 3 times. Among the 20 defaulters, only 2 (10%) patients turned up for the second follow-up appointment after telephone reminder. Two main reasons for default were 'too ill to come' (38.5.5%) and logistic difficulties (23.1%). No correlation was found between patient education, children education, income, ECOG status, stage of the disease, race, and gender with the defaulter rate.

CONCLUSION: Defaulter rate among lung cancer patients was 21.1%. Children education level is the only significant factor associated with the defaulter rate.

Key words:

Children education level, defaulter, follow-up, lung cancer, phone reminder

Patients who fail to attend follow-up appointments are a source of disappointment and puzzlement to the physician. Default may result in delaying the appropriate treatment, which affect outcomes and even mortality. Several studies published previously quoted default rates at different out-patients clinic ranged between 5% and 42%.^[1-7] Reasons which have been noted for default in various studies include symptom duration or resolution, illness, long waiting periods, forgotten appointments, work commitment, illness, hospital administrative error, and transport problems.^[8-11] There is an increasing number of articles which recognizes the importance of research on defaulter in clinical practice.

In our years of experience, we noticed that a high proportion of patients who were provisionally diagnosed with lung cancer did not turn up for follow-up appointments after initial investigations. Some patients that came for follow-up refused chemotherapy and/or radiotherapy. Some patients even sought traditional treatment. From our search, till date there is no published literature on defaulters among lung cancer patients. The primary

objectives of this prospective study were to determine the defaulter rate among lung cancer patients and the reasons for default. The secondary objectives of this study were to identify the possible intrinsic and extrinsic factors (e.g, demographic data, socioeconomic status, educational level of the patients, and clinic-pathological characteristics of lung cancer) affecting the defaulter rate.

The findings will allow clinicians and administrators in our hospital to take into consideration those factors associated with defaults when scheduling follow-up appointments. This will also allow us to identify patients at higher risk of defaulting hence reducing the costs of intervening in patients who are defaulters.

Methods

This was a prospective study carried out in Hospital Tengku Ampuan Afzan, Kuantan, Pahang from November 2007 till November 2009.

All patients suspected to have lung cancer from the respiratory clinic, medical and respiratory wards and bronchoscopy suites were recruited.

Access this article online
Quick Response Code:

Website: www.thoracicmedicine.org
DOI: 10.4103/1817-1737.91556

The diagnosis of lung carcinoma was based on history (hemoptysis associated with loss of weight and appetite) and/or physical examination (finger clubbing, enlarged supraclavicular lymph node, pleural effusion/lung collapse) and/or chest X-ray (pleural effusion/lung collapse/persistent consolidation/lung mass) and/or computed tomography (CT) of thorax (lung mass/collapse/mediastinal or subcarinal or hilar lymph nodes). Only those patients with histologically confirmed lung cancer were included for analysis.

All patients' detailed demographic data, occupation, smoking history, socioeconomic status and highest educational level of the patients' children and the patients were recorded. Three different phone numbers from the patient and family member and current home addresses were documented to facilitate contact during the study. Defaulter was defined as the patient who did not turn up for follow-up 2 weeks after the given appointment date or who did not turn up for the planned treatment (chemotherapy or radiotherapy) 2 weeks after the given appointment. Defaulters were further classified into intermittent defaulters (defaulted at least one follow-up or planned treatment for a given appointment date) and persistent defaulters (defaulted 2 consecutive appointments despite telephone reminders). Once the patient defaulted, a phone call was made to the patient or the family members to find out the reasons for default. If the patient cannot be reached through phone, home visit was carried out to explore the reasons for default.

Demographic data, socioeconomic status and educational level of the defaulters and non-defaulters were compared using χ^2 test. The reasons for default were determined. The functional status of the patients at presentation were classified according to ECOG. The International Staging System for Lung Cancer (ISSLC) was used to stage the patients

Results

Patients' personal characteristic

A total of 95 patients were recruited. Table 1 summarized the demographic characteristics of our patients. The age of our subjects ranged from 30 to 83 years old with a mean age of 60 ± 10.5 years. The majority of our patients were Malays (66.3%) followed by Chinese (28.4%). A great proportion of the patients was blue collar workers (98.9%) and have a low monthly income (82.1%). Most of our patients had lower education level (73.7%), in contrast to their children, in whom the majority had higher education level (83.2%).

Disease characteristic

Out of 95 patients with histologically confirmed lung cancer, 92.6% were non-small cell lung cancer, 4.2% were small cell lung cancer, 3.2% were other malignancy. The majority of our patients presented with advanced stage 3b (51.6%) and 4 (45.2%). The remaining was stage 3a (3.2%). A large proportion of our patients had good ECOG functional status (ECOG 1) at presentation (47.4%) followed by ECOG 2 (20.0%), ECOG 3 (22.1%), and ECOG 4 (10.5%).

Defaulter characteristics and the reasons for default

Of 95 patients, 20 (21.1%) were overall defaulters. Among

the defaulters, 7 (35.0%) were intermittent defaulters and 13 (65.0%) were persistent defaulters. Of the 7 patients who were intermittent defaulters, 6 patients only defaulted once and one patient defaulted 3 times intermittently. Of these, 2 patients turned up for the second follow-up appointment after the phone call reminder and the remainders died before the second appointment date. Overall, 2 out of 20 patients (10%) who defaulted once successfully resumed follow-up after a telephone reminder.

Table 2 illustrates various reasons for default among the defaulter of this study. The two main reasons for default were "too ill to come" and "logistic difficulty" for both persistent and intermittent defaulters. Among the final defaulters, as many as 7.7% of them defaulted because they sought alternative

Table 1: Demographic characteristic of the patients with corresponding number of subjects (n)

Demographic characteristic	n (%)
Gender	
Male	77 (81.1)
Female	18 (18.9)
Race	
Malays	63 (66.3)
Chinese	27 (28.4)
Indians	3 (3.2)
Aborigines	2 (2.1)
Occupation	
Blue collar	94 (98.9)
White collar	1 (1.1)
Monthly income	
<USD 285 (RM1000)	78 (82.1)
>USD 285 (RM1000)	17 (17.9)
Patients' education level	
Primary or lower education level	70 (73.7)
Secondary or higher education level	25 (26.3)
Patient's children's education level	
Primary or lower education level	16 (16.8)
Secondary or higher education level	79 (83.2)

Table 2: The reasons for default in persistent and intermittent defaulters

Reason	Persistent default		Intermittent defaulter		
	1 st time n (%)	2 nd time n (%)	1 st time n (%)	2 nd time n (%)	3 rd time n (%)
Too ill to come	5 (38.5)	4 (30.8)	2 (28.6)	-	-
Logistic difficulty	3 (23.1)	3 (23.0)	1 (14.2)	-	-
Seek traditional treatment	1 (7.7)	2 (15.4)	-	-	-
Not keen for follow up	1 (7.7)	1 (7.7)	-	-	-
Not keen for treatment	2 (15.3)	2 (15.4)	2 (28.6)	1 (20.0)	-
Forgotten appointment	1 (7.7)	-	2 (28.6)	-	1 (100)
Given wrong date	-	1 (7.7)	-	-	-
Dead before appointment	-	-	-	4 (80.0)	-
Total	13 (100)	13 (100)	7 (100)	5 (100)	1 (100)

traditional treatment. None of the intermittent defaulter sought traditional treatment.

Table 3 illustrates the association between characteristics of lung cancer patients and defaulters. There was no significant difference between defaulters and non-defaulters in terms of race, gender, income, ECOG, stage of the lung cancer, patients' education level, and patients' children's education level and the defaulter rate.

Discussion

In general, numerous studies conducted in previous years noted that the defaulter rate at different outpatient clinic (general adult clinic, orthopedic/trauma clinic, community health clinic, and primary care clinic) ranged from 12% to 42%.^[1-7] To date, there were only fewer than five studies ever published on defaulter rate among patients with cancer namely colorectal, breast and childhood cancer, which reported that the defaulter rate ranged from 15 to 21%.^[12-14] In our study, the defaulter rate among suspected lung cancer patients was 21.1%. From our extensive Pubmed search and literature review, we did not find any similar study looking at defaulters among lung cancer patients. However, we have found a study conducted in Singapore by Lee *et al.* on predictor of failed attendance in a multi-specialty outpatient centre in which 22864 patients were recruited. Their defaulter rate was 39%.^[8]

Various studies have looked into features associated with default for instance demographic and socioeconomic status.

Table 3: The association between characteristics of lung cancer patients and default status

Patients' characteristic	Default status		P value
	Defaulter (%)	Non-defaulter (%)	
Age			
<60 years	10 (50.0)	38 (50.7)	0.578
>60 years	10 (50.0)	37 (49.3)	
Race			
Malays	14 (70.0)	50 (66.7)	0.502
Chinese	6 (30.0)	25 (33.3)	
Gender			
Male	15 (75.0)	62 (82.7)	0.314
Female	5 (25.0)	13 (17.3)	
Income			
<RM 1000	17 (85.0)	61 (81.3)	0.496
>RM 1000	3 (15.0)	14 (18.7)	
ECOG			
0/1	9 (45.0)	35 (46.7)	0.549
2/>	11 (55.0)	40 (53.3)	
Stage of lung cancer			
Stage 3a/b	10 (50.0)	42 (56.0)	0.409
Stage 4	10 (50.0)	33 (44.0)	
Patient's education			
Primary school or lower	17 (85.0)	53 (70.7)	0.157
Secondary school or higher	3 (15.0)	22 (29.3)	
Children's education			
Primary school or lower	5 (25.0)	11 (14.7)	0.218
Secondary school or higher	15 (75.0)	64 (85.3)	

RM = Malaysian ringgit; ECOG = Eastern Cooperation Oncology Group

Several studies concluded that younger adults are more likely to default.^[8-10] The findings in literature for low socioeconomic status associated with default have yielded inconsistent results in non-cancer patients.^[10,11] We did not find any significant association of defaulter with socioeconomic factors in our lung cancer study population. However, Klosky *et al.* and Johnson *et al.* had demonstrated that lower socioeconomic status was associated with default among patients with cancer.^[12,13] Interestingly, Lee *et al.* from Singapore concluded that Malays and Indians had significant higher odds ratio for default compared to Chinese.^[8] Similarly in our study, Malays tend to default more than Chinese (70.0% vs 30.0%). However the P value was not significant probably because of our small sample size. The main association with hospital default was reported as being of the male gender.^[9] We did not find any significant association between gender and default. Similarly, Kosmider *et al.* demonstrated that gender was not associated with default in patients with colorectal cancer.^[12]

A study conducted by Frankel *et al.* noted that no significant difference was found between defaulter and non-defaulter according to the seriousness of the illness.^[15] The seriousness of the illness in this study was based on the provisional referral diagnosis, by the degree to which the patient's activity was limited, by the level of the pain, and by the duration of symptoms. There was no study published on the association of the stage of cancer and the performance status of the patients with the defaulter rate. However, our study supported the findings of Frankel *et al.* that seriousness of illness as reflected by poor performance status and the advanced stage of lung cancer were not significantly associated with defaults. Johnson R *et al.* had shown that patients with full time education were less likely to default.^[14] In our study the only significant factor associated with default was lower children's education level. This had demonstrated the importance of education in driving awareness as well as improving attitude toward better healthcare and compliance. Vernon *et al.* and Wong *et al.* have reported that younger age group of below 40 years had higher rate of default.^[8,16] However, we did not find any significant correlation between age and defaulter rate in our study. This is because almost all of our patients were more than 40 years old.

There were several studies looking at reasons for default. Reasons which have been noted for default in various studies include symptom duration or resolution, illness, long waiting periods, forgotten appointments, work commitment, illness, hospital administrative error, and transport problems.^[8-11] A few studies had consistently reported that "forgotten the appointment" and "work commitment" were the most common causes of default.^[9,16-18] However in our study, the two most common reasons for default were illness and logistic difficulties. Debilitating health is the most common reason for default because the majority of our patients had advanced stage of lung cancer which negatively affect their morbidity and well-being. This was supported by the fact that default is not thought to be related to the severity of the patient's condition, except in the case of psychiatric illness, where default may be a marker of severity of illness.^[9]

In terms of logistic difficulties, most of our patients claimed that they were unable to attend the clinic because of poor access to public transportation, no relative available to send

them to hospital, staying far from hospital or unable to afford the transportation expenses. Work commitment was not the commonest cause of default in our study probably because the majority of our patients were unemployed or they had quit their jobs after the diagnosis of lung cancer was made. Others reasons were seeking traditional treatment, and refusing treatment due to side-effect concerns of chemotherapy. Seeking traditional treatment was never reported as a cause for default in our literature search. It is noteworthy that as part of the culture of our country, a proportion of the patients still believe in traditional treatment and object chemotherapy as they believe it may cause death.

Several studies have found that offering telephone reminders before actual appointment date had resulted in reductions in defaulter rate.^[1,19-22] Another study had shown that telling patients what to expect reduced defaulter rate overall significantly from 15% to 4.6%.^[9] In our study, we found that despite telephone reminder and adequate counseling, only 10% of our defaulted patients turned up for the appointment after telephone reminder. Our patients also had a much higher absentee rate of 90% as compared to other studies, which ranged from 4.0% to 25.3%.^[20,23,24] None of these studies included patients with any form of cancer. This higher absentee rate was probably a result of patients' negative perception toward the survival benefit of chemotherapy in advanced lung cancer.

In conclusion, defaulter rate among lung cancer patients in our study was 21.1. The two most common reasons for default were illness and logistic difficulties. Telephone reminder was helpful to ensure compliance to follow-up.

References

1. Deyo RA, Inui TS. Dropouts and broken appointments. A literature review and agenda for future research. *Med Care* 1980;18:1146-57.
2. Hamilton W, Alison R, Sharp D. Effect on hospital attendance rates of giving patients a copy of their referral letter: Randomized controlled trial. *BMJ* 1999;318:1392-5.
3. AL-Shammari SA. Failures to keep primary care appointments in Saudi Arabia. *Fam Pract Res J* 1992;12:171-6.
4. Gatrad AR. A completed audit to reduce hospital outpatients non-attendance rates. *Arch Dis Child* 2000;82:59-61.
5. Chung JW, Wong TK, Teung AC. Non-attendance at an orthopaedic and trauma specialist outpatient department of a regional hospital. *J Nurs Manag* 2004;12:362-7.
6. Hermoni D, Mankuta D, Reis S. Failure to keep appointments at a community health centre. Analysis of causes. *Scand J Prim Health Care* 1990;8:151-5.
7. Macharia WM, Leon G, Rowe BH, Stephenson BJ, Haynes RB. An overview of interventions to improve compliance with appointment keeping for medical services. *JAMA* 1992;267:1813-7.
8. Lee VJ, Earnest A, Chen MI, Krishnan B. Predictors of failed attendances in a multi-specialty outpatient centre using electronic databases. *BMC Health Serv Res* 2005;6:50-1.
9. Sharp DJ, Hamilton W. Non-attendance at general practices and outpatient clinics. *BMJ* 2001;323:1081-2.
10. Sharp DJ, Hamilton W, Round A. Patient, hospital, and general practitioner characteristic associated with non-attendance: A cohort study. *Br J Gen Pract* 2002;52:317-9.
11. Cosgrove MP. Defaulters in general practice: Reasons for default and patterns of attendance. *Br J Gen Pract* 1990;40:50-2.
12. Kosmider S, Sheddha S, Jones IT McLaughlin S, Gibbs P. Predictors of clinic non-attendance-opportunities to improve patient outcome in colorectal cancer. *Intern Med J* 2010;40:757-63.
13. Klosky JL, Cash DK, Buscemi J, Lensing S, Garces-Webb DM, Zhao W, et al. Factors influencing long-term follow up clinic attendance among survival of childhood cancer. *J Cancer Surviv* 2008;2:225-32.
14. Johnson R, Horne B, Feltbower RG, Butler GE, Glaser AW. Hospital attendance patterns in long term survivors of cancer. *Arch Dis Child* 2004;89:374-7.
15. Frankel S, Farrow A, West R. Non-attendance or non-invitation? A case-control study of failed outpatient appointments. *BMJ* 1989;298:1343-5.
16. Wong TY, Pang AL, Chu WC, Choi M, Lam WW. Audit of attendance for scheduled breast imaging examinations. *JHK Coll Radiol* 2003;6:78-80.
17. Stone CA, Palmer JH, Saxby PJ, Devaraj VS. Reducing non-attendance at outpatient clinics. *J R Soc Med* 1999;92:114-8.
18. Wong HY, Chan S. The geriatric out-patient defaulters: Why and how to get them back. *JHK Geriatric Soc* 1990;1:25-7.
19. Read M, Byrne P, Walsh A. Dial a clinic- a new approach to reducing the number of defaulters. *Br J Healthcare Manage* 1997;3:307-10.
20. Grover S, Gagnon G, Flegel KM, Hoey JR. Improving appointment-keeping by patients new to a hospital medical clinic with telephone or mailed reminders. *Can Med Assoc J* 1983;129:1101-3.
21. Levy R, Claravall V. Differential effects of a phone reminder on appointment keeping for patients with long and short between visit intervals. *Med Care* 1977;15:435-8.
22. Robert N, Meade K, Partridge M. The effect of telephone reminders on attendance in respiratory outpatients clinics. *J Health Serv Res Policy* 2007;12:69-72.
23. Haynes JM, Sweeney EL. The effect of telephone appointment-reminder calls on outpatient absenteeism in a pulmonary function laboratory. *Respir Care* 2006;51:36-9.
24. Shepard DS, Moseley TA 3rd. Mailed versus telephoned appointment reminders to reduce broken appointments in a hospital outpatient department. *Med Care* 1976;14:268-73.

How to cite this article: Ng TH, How SH, Kuan YC, Fauzi AR. Defaulters among lung cancer patients in a suburban district in a developing country. *Ann Thorac Med* 2012;7:12-5.
Source of Support: Nil, **Conflict of Interest:** None declared.