

THE PATTERN OF TOBACCO USE AMONG NON-PULMONARY TUBERCULOSIS PATIENTS ATTENDING A CHEST CLINIC IN SOUTH - WESTERN NIGERIA.

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ABSTRACT

Objective: To determine the pattern of tobacco use among non-pulmonary tuberculosis patients attending the chest clinic of Ladoke Akintola University of Technology Teaching Hospital, Osogbo, Osun State, Nigeria.

Patients and methods: One hundred and four non-pulmonary tuberculosis patients attending the chest clinic between January 2003 and December 2005 were studied with respect to their tobacco use habits using a questionnaire after their consents had been obtained. Questions were asked about the form(s) of tobacco used, the mode(s) of use, the duration of use and the amount (in case of cigarette smoking), and the duration of stoppage of tobacco use.

Results: There were no current smokers among the patients studied, but 24% of them had used tobacco before presentation, while 84% of these had specifically smoked cigarettes. There were no pipe smokers, no cigar smokers, and no tobacco chewers.

The rate of cigarette smoking was highest among the COPD patients (76.5%), and they also have the highest number of pack-years. Smoking rates in the other patients are: lung abscess (50%), empyema thoracis (50%), bronchial asthma (33.3%), and community acquired pneumonia (11.1%).

No case of lung cancer was encountered. Two patients with lung abscess had smoked both cigarettes and marijuana in combination while another 2 patients with empyema thoracis had smoked the same combination before presentation.

There is no relationship between the duration of stoppage of tobacco use and the subsequent development of non-tuberculous respiratory disease.

Conclusion: Tobacco remains a very significant threat to respiratory health, as this study has demonstrated. The campaign against its use therefore must be intensified.

Key words: Tobacco, Non-pulmonary TB, Chest Clinic, Nigeria

(Accepted 18 January 2007)

INTRODUCTION

The habit of tobacco use was purportedly introduced into the African continent by explorers from the more developed parts of the world¹. Mungo Park, as early as 1875, during his first expedition in West Africa found tobacco use to be a popular and common habit among the inhabitants². This unhealthy habit has however continued to pose a serious threat to human well being; the lungs being at particular risk, especially when tobacco is used in one form or another. Lung diseases that have been associated with smoking include lung cancer, chronic obstructive pulmonary disease (COPD), exacerbation of bronchial asthma, infections such as pulmonary tuberculosis, community acquired pneumonia (CAP), especially legionnaire's disease,

and acute bronchitis³⁻⁷. This study was designed to determine the pattern of tobacco use among non-pulmonary tuberculosis (NPTB) patients attending the chest clinic of Ladoke Akintola University of Technology Teaching Hospital, Osogbo, Osun State, Nigeria.

PATIENTS AND METHODS

A questionnaire was designed by the authors and this was administered to randomly-selected non-pulmonary tuberculosis (NPTB) patients attending the chest clinic. Patients' consents were obtained before their participation in the study.

The questionnaires were administered in the clinic after necessary explanations to the patients. The following information were obtained:

1(a) Tobacco use / smoking including the form of

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tobacco used or smoked i.e whether cigarettes only, or combinations such as cigarettes plus snuff, licking plus snuffing tobacco, cigarettes plus marijuana, snuff only, cigar only, pipe only, chewing tobacco, licking or sucking tobacco only, or none of the above.

- b. Duration and amount of tobacco use / cigarette smoking (pack-years were calculated in case of cigarette smoking)
 - c. Duration of stoppage of tobacco use / cigarette smoking before the first presentation at the clinic.
2. The diagnosis of each patient was noted.

RESULTS

This study took place from January 2003 to December 2005 and a total of 104 non-pulmonary tuberculosis (NPTB) patients were studied.

Table 1 shows the disease pattern. Bronchial asthma the constitutes the largest number of 37 (35.6%), then CAP 18(17.3%), COPD 17(16.3%), acute bronchitis 12(11.5%), lung abscess 7(6.7%), empyema thoracis 5(4.8%), TB lymphadenitis 5(4.8%) and TB spine 3(2.9%).

There was no current tobacco user at the time of this study among all the 104 NPTB patients. Those who used to use tobacco among them had stopped the habit before presentation. In Table 2, the number and respective percentage of ex-tobacco users (i.e. those who were tobacco users before presentation at the clinic) within each disease entity is shown: COPD 13(52%), bronchial asthma 5(20%), lung abscess 2(8%), empyema thoracis 2(8%), TB lymphadenitis 1(4%), and TB spine (nil). The total number of ex-tobacco users is 25 out of the 104 patients i.e 24%. Cigarettes constitutes the most commonly abused substance before the patients presented at the clinic, as shown in Table 3. A total of 21 patients smoked cigarettes out of the 25 ex-tobacco users i.e 84%. This is broken down as follows: cigarettes alone 8(32%), cigarettes plus snuff 8(32%), cigarettes plus marijuana 4(16%). Of all the 104 patients studied 9(8.6%) had smoked cigarettes alone, 8(7.7%) had smoked cigarettes in addition to snuffing tobacco, 4(3.8%) had smoked cigarettes in addition to smoking marijuana, 1(1%) had licked tobacco in addition to snuffing tobacco. While three patients (2.9%) had snuffed tobacco alone, there were no cigar smokers, pipe smokers, tobacco chewers and tobacco lickers/suckers.

The disease pattern in relation to the tobacco used is shown in Table 4. Out of the 9 patients who had smoked cigarettes alone, 3(33.3%) had bronchial asthma, 1(11.1%) had CAP, 5(55.6%) had COPD,

while all the 8 patients who had smoked cigarettes in addition to snuffing tobacco (100%) had COPD. There were 4 patients who had smoked cigarettes in addition to smoking marijuana, and 2 had lung abscess (50%) while the remaining 2(50%) had empyema thoracis.

Two patients had combined licking and snuffing tobacco, one each (50%) had acute bronchitis and lung abscess respectively. The two patients who had snuffed tobacco only had bronchial asthma. The pack-years of cigarette smoking among the 21 ex-cigarette smokers are shown in Table 5. There were 5 patients with less than 1 pack year of smoking and this is broken down as follows: COPD 1(20%), lung abscess 1(20%), empyema thoracis 1(20%), bronchial asthma 2(40%). For 1-2 pack-years of smoking, there were a total of 6 patients constituting COPD 4(66.7%), lung abscess 1(16.7%), and CAP 1(16.7%). There were two patients in the 3-5 pack-years group comprising empyema thoracis 1(50%) and bronchial asthma 1(50%). All the 8 patients in the 6-10 pack-years group (100%) had COPD. There was no patient who had smoked above 10 pack-years. The duration of stoppage of tobacco use before presentation by the 25 ex-tobacco users is shown in Table 6. There were 2 patients who had stopped tobacco use less than 1 year before presentation, one each having COPD (50%) and lung abscess (50%) respectively. Those who had stopped tobacco use less than 5 years ago were a total of 5 constituting empyema thoracis 2(40%), TB lymphadenitis 1(20%), bronchial asthma 1(20%), and acute bronchitis 1(20%). A total of 7 patients had stopped tobacco use less than 10 years before presentation with the breakdown as follows: COPD 4(57.1%), lung abscess 1(14.3%), bronchial asthma 1(14.3%), and CAP 1(14.3%). Ten patients had stopped the habit less than fifteen years ago comprising COPD 7(70%), and bronchial asthma 3(30%). One patient having COPD had stopped tobacco use more than 40 years ago.

Table 1: Disease Pattern

Disease	No (%)
Bronchial Asthma	37(35.6)
Community acquired pneumonia (CAP)	18(17.3)
Chronic obstructive pulmonary disease (COPD)	17 (16.3)
Acute bronchitis	12 (11.5)
Lung abscess	7 (6.7)
Empyema thoracis	5 (4.8)
T.B. lymphadenitis	5(4.8)
T.B. Spine	3(2.9)
Total	104(100)

Table 2: Tobacco use within each disease entity

Disease	No. of tobacco users (% of total for each disease group)
COPD	13(52)
Bronchial asthma	5(20)
Lung abscess	2 (8)
Empyema thoracis	2 (8)
TB lymphadenitis	1 (4)
Acute bronchitis	1 (4)
Community acquired pneumonia (CAP)	1(4)
T.B. Spine	-
Total	25(100)

Table 3: Pattern of types and distribution of tobacco used

Types	No (%)
Cigarettes only	9(8.6)
Combinations:	
Cigarettes + Snuff	8(7.7)
Cigarettes + Marijuana	4(3.8)
Licking + Snuffing	1(1.0)
Snuff only	3 (2.9)
Cigar only	-
Pipe only	-
Chewing tobacco	-
Licking / Sucking tobacco only	-
None of the above	79 (76)
Total	104(100)

Table 4: Disease pattern and pattern of tobacco used

	Bronchial Asthma No (%)	CAP No (%)	COPD No (%)	Acute Bronchitis No (%)	Lung abscess No (%)	Empyema thoracis No (%)	T.B lymph. No (%)	T.B. Spine No (%)	Total No (%)
Cigarettes only	3(33.3)	1(11.1)	5(55.6)	-	-	-	-	-	9(100)
Combinations:									
Cigarettes + Snuff	-	-	8(100)	-	-	-	-	-	8(100)
Cigarettes + Marijuana	-	-	-	-	2(50)	2(50)	-	-	4(100)
Licking + snuffing	-	-	-	1(50)	1(50)	-	-	-	2(100)
Snuff only	2(100)	-	-	-	-	-	-	-	2(100)
Cigar only	-	-	-	-	-	-	-	-	-
Licking / sucking tobacco only	-	-	-	-	-	-	-	-	-
None of the above	32(40.5)	17(21.5)	4(5.1)	11(13.9)	4(5.1)	3(3.8)	5(6.3)	3(3.8)	79(100)
Total	37(35.6)	18(17.3)	17(16.3)	12(11.5)	7(6.7)	5(4.8)	5(4.8)	3(2.9)	104(100)

Table 5: Pack Years of cigarette smoking**(Total number of cigarette smokers = 21)**

Pack Years	COPD No (%)	Lung abscess No (%)	Empyema thoracis No (%)	Bronchial asthma No (%)	CAP No (%)	Total No (%)
<1	1(20)	1(20)	1(20)	2(40)	-	5(100)
1-2	4(66.7)	1(16.7)	-	-	1(16.7)	6(100)
3-5	-	-	1(50)	1(50)	-	2(100)
6-10	8(100)	-	-	-	-	8(100)
11-15	-	-	-	-	-	-
16-20	-	-	-	-	-	-
Total	13(61.9)	2(9.5)	2(9.5)	3(14.3)	1(4.8)	21(100)

Table 6: Duration of stoppage of tobacco use before presentation (Total = 25 patients)

Years	COPD No (%)	Lung Abscess No (%)	Empyema thoracis No (%)	TB Lymph- adenitis No (%)	Bronchial asthma No (%)	Acute bronchitis No (%)	CAP No (%)	Total No (%)
<1 year ago	1(50)	1(50)	-	-	-	-	-	2(100)
1-4 years 11 months ago	-	-	2(40)	1(20)	1(20)	1(20)	-	5(100)
5-9 years 11 months ago	4(57.1)	1(14.3)	-	-	1(14.3)	-	1(14.3)	7(100)
10-14 years 11 months ago	7(70)	-	-	-	3(30)	-	-	10(100)
15-19 years 11 months ago	-	-	-	-	-	-	-	-
20-39 years 11 months ago	-	-	-	-	-	-	-	-
>40 years ago	1(100)	-	-	-	-	-	-	1(100)
Total	13(52.0)	2(8.0)	2(8.0)	1(4)	5(20)	1(4)	1(4)	25(100)

DISCUSSION

From the results of this study, the three most common NPTB diseases among patients attending the chest clinic of Ladoké Akintola University of Technology Teaching Hospital are, in decreasing order of frequency: bronchial asthma, CAP and COPD. If PTB is added, they form the four most common respiratory diseases for which patients attend this clinic. This fact has been highlighted elsewhere⁸

There is no current tobacco user among the 104 patients studied. The reason for this may be that the ex-tobacco users must have stopped the unhealthy habit either as a result of counseling, or the symptoms from their diseases might make continuation of the habit unwise or impossible. It is worthy of note that there is no patient with lung cancer in this study. The rarity of lung cancer among patients attending this chest clinic has also been highlighted elsewhere⁸

Ex-tobacco users constitute 24 percent of all the patients studied while 20.2 percent are specifically cigarette smokers. Hence cigarette smoking is the most common form of tobacco use among NPTB patients from this study. This is in keeping with the findings that alcohol and tobacco are the most common substances of abuse in Africa⁹. Also, the results of this study show that Africans (Nigerians specifically) are in the habit of combining various forms of tobacco for simultaneous use, or even combining one form of tobacco (especially cigarettes) with other substances of abuse e.g. marijuana.

The finding of a smoking rate of 20.2 percent among NPTB patients in this study can be compared with the

results of other workers in Nigeria. A national survey in Nigeria found a smoking rate of 24.4% in males and 6.7% in females¹⁰. Ibeh and Ele found a smoking rate of 7.7% among young Nigerian females¹¹, while Ayankogbe et al found a rate of 17.6% among rural dwellers in South West Nigeria¹⁰.

This study lends support to the observation that cigar smoking, pipe smoking and chewing tobacco are not common modes of tobacco use in our environment. Cigars and pipes are more expensive than other modes of tobacco use. Tobacco chewing is common in India¹². Thirteen out of the 17 patients with COPD (76.5%) had smoked cigarettes before presentation, and 7 of them had the highest number of pack-years in this study. This is in agreement with the fact that cigarette smoking remains the most important single (and preventable) aetiological / predisposing factor for COPD^{4,13}.

Three of the patients with bronchial asthma (33.3%) had smoked cigarettes in this study, and 2 of them developed their asthma after less than 1 pack-year of smoking while the other patient developed the disease after 3-5 pack-years of smoking. It is possible that these patients already had the genetic tendency to develop asthma, and cigarette smoking now served as the triggering factor. Smokes in general, and cigarette smoke in particular, are known to trigger or exacerbate asthmatic attacks in people who are genetically predisposed¹⁴.

Two patients with lung abscess (50%) and two patients with empyema thoracis (50%) had smoked both cigarettes and marijuana before presentation (three of them less than 1 pack-year and one less than 2 pack-years). Each of these substances of addiction is known to

reduce the body's immune defences to various respiratory infections^{6,15,16}, hence these patients might have become susceptible to these infections due to the smoking.

The impact of tobacco smoke on the development of CAP may not be as severe as for other respiratory diseases especially COPD and bronchial asthma from the results of this study. This is because only one out of the eighteen patients with CAP (3.1%) was a smoker. However, cigarette smoke has also been implicated as a possible predisposing factor to CAP^{6,7}. As shown in this study, and in agreement with general observation, most cigarette smokers in this environment are not heavy smokers. The highest pack-years are in the 6-10 group. There is no definite relationship between the duration of stoppage of tobacco use before presentation and the pattern of respiratory disease in this study. Once an individual is a tobacco user (especially cigarette smoker), stopping the habit may not prevent the subsequent development of respiratory disease in later years.

In conclusion, this study demonstrates that cigarettes and possibly marijuana smoking (singly or in combination) may predispose the respiratory system to developing non-tuberculosis diseases, such as COPD, bronchial asthma, lung abscess, empyema thoracis, and possibly CAP. These diseases can still develop after many years of quitting the habit, and the role of tobacco snuff, licking or sucking tobacco and various other combinations in the predisposition to developing respiratory diseases needs further study. It is of utmost importance to intensify the campaign against tobacco use, especially cigarette smoking (and other substances of abuse e.g marijuana) to reduce the adverse effects / predisposition to lung disease.

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