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Prevalence of psychosis in tuberculosis patients and their nontuberculosis family contacts in a multidrug treatment-resistant treatment center in Nigeria

V.O. Lasebikan, Ph.D., M.P.H., M.Sc., M.B.C.H.B., F.W.A.C.P. [a,*], O.M. Ige, M.B.B.S, F.W.A.C.P. [b]

[a] Department of Psychiatry, College of Medicine, University College Hospital, Ibadan, Nigeria
[b] Respiratory Unit, Department of Medicine, College of Medicine, University College Hospital, Ibadan, Nigeria

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ABSTRACT

Objective: This study aimed at determining the prevalence of psychosis in tuberculosis (TB) patients in comparison to nontuberculosis control and its correlation with disease pattern.
Method: One hundred and fifteen patients with TB and 112 family members visiting the multidrug treatment-resistant treatment center at University College Hospital Ibadan Centre were screened for psychological distress with the General Health Questionnaire (GHQ-12). Presence of a psychotic condition was determined by the Psychosis Screening Questionnaire and the Structured Clinical Interview for DSM-IV Axis I Disorder and was compared with severity of pulmonary TB.
Results: After adjusting for age, predictors of high/positive GHQ include the following: duration of TB ≥4 years [odds ratio (OR)=4.02, 95% confidence interval (CI)=1.29–11.13], extrapulmonary TB (OR=3.45, 95% CI=1.02–14.11), severe disease extent (OR=5.27, 95% CI=1.05–13.01) and disease category 2 (OR=2.38, 95% CI=1.01–7.99), and predictors of psychosis are as follows: duration of TB ≥4 years (OR=3.99, 95% CI=1.51–9.88), extrapulmonary TB (OR=3.88, 95% CI=1.55–9.98), severe disease extent (OR=9.55, 95% CI=2.15–18.05) and disease category 2 (OR=2.86, 95% CI=1.14–7.55).
Conclusion: In view of high prevalence of psychological distress and psychosis in TB, care of TB patients should include consultative–liaison psychiatric care.

1. Introduction

The World Health Organization (WHO) has reported approximately 14 million people with tuberculosis (TB) in 2009 [1], of which over 95% of mortality comes from developing countries. For example, in 2005, the highest rates per capita were reported to have come from Africa constituting 28% of all TB cases [2].

About three decades ago, the prevalence of TB suddenly rose [3] among patients receiving psychiatric treatment [4], and the association between psychiatric disorders and TB infection became clearer [5]. A major factor responsible for failure of TB control is nonadherence to anti-TB medications secondary to a psychiatric illness [6,7], of which medication side-effects is a major factor [8]. Such anti-TB agents include cycloserine [9], ciprofloxacillin [10], isonicotinic acid hydrazide [11] and rifampicin or ethambutol. This could be responsible for the high prevalence rates of psychiatric comorbidity in patients with drug-resistant TB [8].

Furthermore, the high prevalence of psychological distress that is associated with TB could also be adduced to factors such as comorbid immunosuppressive diseases, including HIV/AIDS, malnutrition, smoking [12], extrapulmonary spread, psychological reaction to the illness, stigma and discrimination [13]. However, more specifically, severe mental disorders are risk factors themselves for acquisition and transmission of TB [14], and in order to improve the outcome of TB, identification and treatment of psychiatric comorbidity are very important [15].

Although mood and anxiety disorders are more common psychopathology in TB [16], psychotic disorders are also prevalent. Mohammadi and colleagues [17] found that the prevalence of psychotic disorders in TB was 0.89% in Iran. On the other hand, a prevalence rate of about 5.4% of active TB was found by Zeenreich and colleagues [18] among patients with schizophrenia. Plagued by substantial literature on the mutual relationship between physical and mental illnesses [19], most researches have been concerned with physical morbidity in the mentally ill [20], although there is a growing interest in the psychiatric consequences of physical illnesses [21].

In Nigeria, south of the Sahara, with a population of over 160 million people, TB continues to constitute a huge public health burden as the country ranks second highest in TB disease burden in Africa and 10th among the 22 countries with the highest TB burden in the world.

* Corresponding author at: Department of Psychiatry, College of Medicine, University of Ibadan, PMB 5116, Ibadan, Nigeria.
E-mail address: victorlash@yahoo.com (V.O. Lasebikan).

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Globally, the prevalence of multidrug treatment-resistant TB (MDR-TB) is estimated to be 3.5% among new TB patients and 20.5% among previously treated patients [22].

In Nigeria, the estimates of the MDR-TB burden in 2013 show that the percentage of TB cases with MDR-TB among new cases (primary MDR-TB) is 2.9, while that of the re-treatment cases is 14. This makes Nigeria to occupy the ninth position among the 27 high burden MDR-TB countries of the world [23].

Thus, our main objectives were to determine the prevalence of psychosis in TB patients in comparison to nontuberculosis control and its correlation with disease pattern.

2. Methods

2.1. Study design

This is an ongoing prospective study. However, we recruited our sample between January 2010 and November 2014

2.2. Place of study

The study was carried out at the MDR-TB treatment center under the chest unit of the Department of Medicine, University College Hospital, Ibadan. This is the first treatment center established in Nigeria with a 25-bed capacity and started treatment in July 2010.

In the center, all the culture and drug susceptibility test-proven cases of MDR-TB cases were admitted to a 6-month intensive phase treatment followed by 12 months of ambulatory phase. The patients were hospitalized during the intensive phase and placed on the standardized regimen of the National Tuberculosis Control Program (NTCP) consisting of amikacin, prothionamide, levofloxacin, pyrazinamide, cycloserine and pyridoxine. All drugs except amikacin were continued during the ambulatory period.

2.3. Ethical consideration

Ethical approval was obtained from the ethical review committee of the Research Division of the University College Hospital, Ibadan, and was in accordance with the ethical principles of the Committee on Publication Ethics; anonymity was also maintained.

2.4. Study sample

A total sample of 115 patients attending the MDR-TB treatment center served as cases and 112 family members/caregivers as controls. Both the cases and the controls were consecutively recruited into the study, with the first subject in each group randomly selected and given a tally in order to avoid duplication.

2.5. Inclusion

Consenting patients with TB attending MDR-TB (pulmonary) served as cases, while the consenting accompanying family members or caregivers served as controls.

2.6. Exclusion

Excluded were participants who were not literate in the languages of instruction (English and Yoruba Languages), nonconsenting patients and nonconsenting family members/givers. Also excluded were family members/caregivers with a past or current history of TB or any psychiatric disorder. All participants with any affective disorder, affective psychosis or delirium were excluded.

2.7. Measures

All respondents were assessed for the presence of psychological distress and psychosis in the first 7 days of admission in order to determine the prevalence of psychological distress and psychosis. Those who had diagnosable psychotic disorders were commenced on treatment. Participants were periodically reviewed in order to detect new cases of psychosis while on admission in the MDR treatment facility.

2.7.1. Instruments of assessments

Sociodemographic questionnaire. This contains information on age, gender, marital status, occupation, education, duration of TB, duration of psychiatric illness, present anti-TB medication, other medications, previous history of diagnosed psychiatric illness, type of psychiatric illness and treating psychiatrist.

Screening for psychiatric morbidity. Using the General Health Questionnaire (GHQ-12) [24], we screened each patient and relative for psychiatric morbidity. Scoring was done in the conventional way in which scores above 2 were regarded as positive. All those who screened positive and a further 10% of those who screened negative progressed to the second phase of the interview. The additional 10% was to capture potential false negatives from GHQ screening.

The GHQ is a self-administered test used for screening for psychiatric morbidity [24]. It has a good internal consistency (Cronbach's alpha .82–.93) and has been validated and used in Nigeria [25].

Psychosis. All respondents who screened positive on GHQ-12 and a further 10% who screened negative were further assessed using the Psychosis Screening Questionnaire [26].

The psychosis screening questionnaire. The psychosis screening questionnaire is a simple six-item yes/no option instrument that probes into lifetime history of hypomania, thought interference, persecution, perceptual abnormalities, strange experiences and hallucination. This short instrument is also a valid instrument for screening for psychosis and has been previously used in Nigeria [27].

Structured Clinical Interview for DSM-IV Axis I Disorder. The psychosis module of the Structured Clinical Interview for DSM-IV Axis I Disorder (SCID) [28] was used to obtain a 12-month diagnosis of any nonaffective psychosis.

The SCID is useful by the clinician as part of a normal assessment procedure to confirm a particular diagnosis and the instrument covers all the criteria of the diagnosis as included in the various modules. It is available in a patient edition for use with subjects who have been identified as psychiatric patients and in a nonpatient edition which is suitable for use in epidemiological studies. The SCID II has a screening module which complemented the psychosis screen, in screening out those who had no psychosis.

2.7.2. Multidrug treatment-resistant TB

The majority of the patients are defaulters, treatment failure cases and relapses, and these are retreatment cases (secondary MDR-TB). The primary MDR-TB cases are those who were not exposed to the TB medications in the past, but acquire the disease by contacts with secondary MDR-TB cases.

We used the National Tuberculosis Program and WHO guidelines to access the severity of TB. This is based on bacillary load, extent of disease and anatomical site that carries a significant acute threat to life or a risk of subsequent severe handicap, or both [29].

2.8. Pilot study

In June 2009, all instruments of data collection were pilot tested among a group of 15 patients with chronic obstructive airway disease and 15 relatives (not part of this study) at State Hospital Ring Road Ibadan, in order to determine the applicability of the research instruments.