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Prevalence of TB and HIV among Patients Attending General Hospital Zambuk

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ABSTRACT

Five hundred and twenty two patients attended the TB unit of General Hospital Zambuk in Gombe State within 3 months during the period under review. Of this number, 10 patients representing 1.9% of the patients had both TB positive and HIV positive (reactive). 90 patients were TB positive without HIV, representing 17.2% of all the patients. 60 of the patients were female (about 66.7%), while 30% of the patients were male (about 33.3%). Of the 10 patients with both TB and HIV, 3 are on retroviral treatment representing 30% of the patients, 73 patients are reactive and TB negative representing 13.98% of the patients. The age range of the patients, both male and female is 25 – 52. Eight (8) of the patients, representing 80% were for diagnosis (they had two sputum smear examined), while 20% representing 2 of the patients with both HIV and TB were for follow up. Out of the 73 TB freebut HIV reactive patients, 38 representing 52.1% were male, while 47.9 representing 35 of the patients were female. Most of the patients reside outside Zambuk, they come from near by villages of Difa (about 7 km) to as far as Gwani east and Kuri (about 45 km and 40 km respectively) and mid way places such as Boltongo, Kwadom and Gombe town, the state capital to access laboratory diagnosis and treatment.

Key: Tuberculosis, HIV, Sputum, Retroviral treatment.

1.0 INTRODUCTION

Tuberculosis (TB) is the leading cause of morbidity and mortality among people leaving with HIV/AIDS. It is an infectious disease which spread from person to person through the air by droplet nuclei and is a major public health problem in Nigeria. The country ranks 5th among the 22 high TB burden countries in the world and 2nd in Africa (2008 TB Global Report).

The TB burden in this country is further compounded by the high HIV/AIDS prevalence of 4.4% (National Sero-prevalence Survey 2005) and the emergence of MDR TB in the country. TB is the most important (airborne) opportunistic infection that affects the HIV positive patient. In high TB burden settings like Nigeria, surveys have shown that up to 10% of people with HIV infection may have previously undiagnosed with TB at the time of HIV counseling and testing (HCT), half of which may be infectious TB cases. 40% to 50% of PLWHA living in high burden TB settings will develop TB in their life in the absence of Isoniazid Preventive Therapy or anti-retroviral therapy. The risk of developing TB disease doubles in the first year after becoming HIV-infected and gets progressively higher over time (Federal Ministry of Health, the National Guidelines for TB Infection Control, 2008, p.g.7D).

BACKGROUND OF THE STUDY

The increasing association between HIV and TB observed over the past five years poses a significant challenge. The HIV sero-prevalence rate among TB patients increased over the years from 2.2% in 1991 to 19.1% in 2001 (Sentinel Survey among high risk group, NASCP 2001) and now estimated to be 27% (WHO Global TB Report, 2006). On the other hand, an estimated 30% - 50% of PLWHA have TB which indicates that the TB situation in the country will continue to be HIV-driven.

National Statistic revealed that 1.45 million Nigerians have so far died from HIV/AIDS; an estimated 30% - 40% of this death is attributable to TB which is a curable disease even among PLWHA. The difficulty in diagnosing TB among PLWHA especially at primary and secondary health facilities in the country contributed greatly to this mortality rate among PLWHA.

There is parity of data on the level of MDR-TB in the country however; Cat 2 treatment failure cases have been reported, suggestive of existence of MDR-TB in the country. WHO estimates that 1.9% of all new TB cases may be resistant to the first line anti-TB drugs. This poses another challenge to the TB program in the country.

STATEMENT OF THE PROBLEM

TB infection is the presence of mycobacterium tuberculosis in the body. The bacteria are inactive but remain alive in the body and can become active later. This condition is also referred to as Latent TB infection (LTBI). Latent TB infection does not cause a person to feel sick, as there are neither symptoms nor signs detected upon medical examination.

Tuberculosis (TB) spread from person to person through the air by droplet nuclei produced when persons with pulmonary or laryngeal tuberculosis cough, sneeze, spit, talk or sing. They may also be produced by aerosol-producing investigations or proceeding of tissue or secretions in the laboratory. To spread, there must be a source (a person with TB disease who produce M tuberculosis, and an exposed person to inhale droplet nuclei containing the bacteria. Although TB is not usually spread by brief contact, anyone who shares air with a person with TB disease of the lungs (pulmonary TB) in an infectious stage is at risk.

In general HIV negative person who becomes infected with M tuberculosis have approximately a 10% risk of developing active TB during their lifetime. This risk is greatest during the first two years after infection. HIV positive and other immunocompromized persons have a greater risk for the progression of latent TB infection to active TB disease. HIV infection is the strongest known risk factor for this progression. Person with latent TB infection who become co-infected with HIV have approximately 5% - 10% risk per year and 50% life time risk of developing active TB. It is against the background that this study was carried out to ascertain the prevalence of TB-HIV co-infection among HIV patients attending General Hospital Zambuk (now Infectious Disease Hospital).

SIGNIFICANCE OF THE STUDY:

The significance of this study is that

1. It shows a remarkable decline in the number of co-infection cases with improved diagnostic technique and DOT treatment.
2. More people are accessing medical care, especially HIV and TB infection, unlike previously when most people avoid testing due to stigmatization.
3. It also indicates that the quality of health care provided by Zambuk General Hospital is attested to; hence people from distant places come to attend to their health need here.
4. Data available (at the time of this study) shows proper documentation and records of the patients that attend the TB and HCT unit of General Hospital Zambuk.
5. It also indicates that there is need to intensify awareness campaign to further discover the prevalence of TB and HIV co-infection.

The fact that the age range used in this study falls within the productive age of the population, and thereby shows its effect on the economy and development of the area of the state affected.

The government should invest more in this segment to attain the Millennium Development Goal of zero tolerance for co-infection of HIV and TB, as well as total eradication of TB and reduction of HIV infection.

PURPOSE OF THE STUDY

1. To determine the prevalence of TB and HIV co-infection among patients attending HCT unit of General Hospital Zambuk
2. To identify the effect in socio-economic condition of patients co-infected with TB/HIV
3. To discover the age range of co-infected patients
4. To analyze the demographic spread of the TB/HIV co-infection among the patients attending HCT unit in GHZ

RESEARCH QUESTION

It is against this background and the fact that there is a correlation between early diagnosis and treatment of TB infection and HIV/AIDS, and the MDR-TB that this study was undertaken. One therefore wonders what would be the prevalence of TB-HIV co-infection and its impact and implication in the people living in and around the health center.

1. What is the prevalence of co-infection among patients attending GHZ HCT unit.
2. What is the socio-economic implication of TB-HIV co-infection among the people, especially those living with HIV/AIDS (PLWHA).

SIGNIFICANCE OF THE STUDY

Tuberculosis is an infectious disease which spreads from person to person. HIV positive and other immunocompromized persons have a greater risk for the progression of latent TB infection to active TB disease which becomes a source of further spread of the disease. HIV infection is the strongest known risk factor for the progression. Therefore, a study on the prevalence of TB-HIV co-infection is important so as to put in place adequate measure that will reduce or possibly prevent or eradicate such cases, especially with the rise in MDR-TB cases. The magnitude of the risk varies according to the type of health care facility that the patient population served and the prevalence of TB in the community as well as the occupational group and availability of effective TBV infection control interventions. A study of the prevalence of TB/HIV co-infection in this community will help to determine the magnitude of the associated risk which includes death, and what intervention is required.

Transmission of M tuberculosis is a recognized risk in health care facilities and could be to patients/clients, visitors/patients relative (especially in case of admission), GHCW's and other staff of the health care facility. This study will inform the health care providers on the measure needed to reduce contracting the disease.

MATERIAL AND METHOD

Sampling Methodology

All specimens were collected from in and out HIV patients receiving medication in Zambuk General Hospital, irrespective of their age and sex.

Study Subject

The test group in this study consists of 522 HIV patients of both male and female.

Study Area

The study was designed to cover individuals receiving treatment at Zambuk General Hospital, Gombe State.

Method of Collection of Specimen

Early morning expectorated sputum was collected from all the patients included in the study into a sterile container and labeled appropriately.

Processing of Specimen

On receiving the sputum specimen, macroscopic examination were carried out to observe their appearance whether purulent, mucoid, mucopurulent, muco-salivary or bloody stained. Smear was done and the specimens were subjected to Zeihl Neelson Staining (ZN) to identify acid fast bacilli (AFB). According to Lynn, 2012.

DEMOGRAPHIC CHARACTERISTICS OF STUDY PARTICIPANTS

Character	Total No. of Participants	% of Participants	No. of male	% of male	No. of female	% of female	Mean CD4 of patients	SD cells/ul	p-value CD4
Sex	522								
Age			295		227		823		0.001
1 – 25	102		76		26		880		
26 – 35	197		109		88		820		
36 – 45	96		34		62		902		
46 – 60	80		55		25		810		
≥60	47		21		26		701		0.008
Marital Status									
Married	220		132		88		1002		
Single	105		96		9		980		
Widow	65		47		18		620		
Divorced/separated	132		20		112		750		>0.005
Occupation									
Student	235		200		35		702		>0.005
Unemployed	55		14		41		520		
Employed	232		81		151		870		
Area									
Zambuk	135		72		63		902		
Dadin kowa	89		61		28		670		
Deba	72		38		34		710		
Kwadon	101		66		35		508		
Difa	68		32		36		802		
Lubo	57		26		31		680		0.0001

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