IOSR Journal of Dental and Medical Sciences (IOSR-JDMS)
e-ISSN: 2279-0853, p-ISSN: 2279-0861.Volume 20, Issue 9 Ser.14 (September. 2021), PP 06-09
www.iosrjournals.org

Epidemiological Characteristics of Tuberculosis in Women of Reproductive Age in a DOTs Centre of Niamey (Niger)

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Abstracts
Background: *Of the 330,000 HIV-related TB deaths among adults (aged ≥15 years) worldwide in 2014, slightly more than 40% were women, accounting for about one-third of all AIDS-related deaths among adult women. The aim of this study is to describe the epidemiological aspects of Tuberculosis in women of reproductive age.*
Materials and Methods: *In this descriptive cross-sectional study from June to December 2015, all women of childbearing age seen in a DOTsCentre of the National Anti-Tuberculosis Centre (CNAT) of Niamey (Niger), 115 female patients in childbearing age belonging to age of 16 to 45 years were enrolled.*
Results: *Out of 456 patients enrolled for tuberculosis treatment a total of 115 (25.21%) were female patients in childbearing age. The average age of the patients was 31 years [16 to 45]. The majority of our study population is not educated (56.50%), (48,69%) are married. Housewives are the most represented with 68.69%.Most of affected patients 88,7% (n=102) were smear positive. 23% (n=13) of patients report a history of familial contact despite 15/115 women are HIV positive (13%). Most of patientspresented sexual life disturbance (88,7%), and abnormalities of menstruation in 70%.*
Conclusion: *Tuberculosis affects the most active women population which are economically productive and at the reproductive age and substantial and severe consequences among women of reproductive age in Niger.*
Key Word: Tuberculosis, Women, Reproductive Age, Niger

Date of Submission: 18-09-2021 Date of Acceptance: 03-10-2021

I. Introduction

Tuberculosis (TB) is a contagious airborne disease. The disease causes the death of about three (3) million people each year, including about 750,000 women. As such, it is the second leading cause of death worldwide after respiratory infections (ARI)[1]. Although in most parts of the world, TB affects and kills more men than women, it is one of the leading infectious causes of death in women and thus of years of life lost[1,2]. Population growth, the HIV epidemic, increasing poverty and rising levels of drug resistance will inevitably increase the burden of the disease in women.While more men than women are diagnosed with TB and die from it, TB can have particularly severe consequences for women, especially during their reproductive years. TB is one of the top five causes of death among women aged 20-59 years, with 480,000 women dying from TB in 2014, including 140,000 deaths among women who were HIV positive. Of the 330,000 HIV-related TB deaths among adults (aged ≥15 years) worldwide in 2014, slightly more than 40% were women, accounting for about one-third of all AIDS-related deaths among adult women[1,2].

Nearly 90% of these HIV-associated TB deaths among women were in Africa[4]. Despite these efforts to control TB, there has been an increase in TB-related morbidity.

In Niger, 7110 cases were reported in 2004, 8224 cases in 2005, 8684 cases in 2006 and approximately 10,000 cases in 2007[7].

The present study, which aims to describe the epidemiological particularities of tuberculosis in women, will allow to enrich the knowledge already acquired and to help the national program of tuberculosis control to improve the management of this pathology in women of childbearing age.

II. Material And Methods

We conducted anobservationalcross-sectional study from June to December 2015 on all women of childbearing age seen in DOT Centre of the National Anti-Tuberculosis Centre(CNAT) of Niamey (capital of Niger). A total 115 female patients in childbearing age belonging to age of 16 to 45 years were enrolled.

Study Design: observational cross-sectional

Study Location: DOTsCentre of the National Anti-Tuberculosis Centre (CNAT) of Niamey (capital of Niger)

Study Duration: 1st June to 31 December 2015

Sample size: 115 female patients

Sample size calculation: The sample size was estimated on the basis of a single proportion design. We calculated proportions with 95% confidence intervals (CIs). The sample size obtained for this study was 115 patients included.

Subjects and selection method: The study population was female patients to age of 16 to 45 years seen in DOTsCentre of the National Anti-Tuberculosis Centre (CNAT) of Niamey (capital of Niger)

Inclusion criteria: All female subjects aged between 15 and 45 years with pulmonary or extra pulmonary tuberculosis, regardless of the site of infection, and under treatment for at least one (1) month and who agreed to participate were included.

Inclusion criteria: Women of childbearing age with any other pathology except those who were HIV-infected.

Data collection

As data collection techniques, we used a collection form made for the need of the study.

The interview with the managers of the facilities visited focused on the daily management of women living with tuberculosis and the questionaries were administered to the patients. Data collection was done with strict respect for anonymity after an informed consent. The data were collected on a form designed for the purpose of the study.

Statistical analysis

Data analysis was performed with the software: Epi info, version 6. We calculated proportions with 95% confidence intervals (CIs). Data entry and presentation of figures with Microsoft Excel and Word 2013.

III. Results

Out of 456 patients enrolled for tuberculosis treatment from June to December 2015, a total of 115 (25.21%) female patients in childbearing age.The average age of the patients was 31 years with extremes ranging from 16 to 45 years.

Socio-demographic Characteristics of patients

The majority of our study population is not educated (56.52%), while those with higher education levels or graduated are less affected (2.60%).Mostof affected patients are married (48,69%), 14,78% are divorced women, 17,39% of widowed and 19,13% of patients are single women.Housewives are the most represented with 68.69%, 21,73% are customers, 5,21% of patients are professionals or government employees; while students are the least affected category with 4.34%.

Clinical and reproductive Characteristics of patients

88,7% of patients (n=102)were smear positive (pulmonary TB) and 11,3% (n=13) were smear negative or extra-pulmonary TB. The most of the patients 67% (n=77) do not know the source of their contamination and 23% (n=13) report familial contact.New cases represent 86% of tuberculosis patients, while treatment failures represent only 6%.About 15/115 women are HIV positive (13%).No pregnant women were registered in our study and 78.8% of them were neither breastfeeding nor on contraception.81 women out of 115 registered in our study reported having at least one (1) child. It appears from this study that 69.62% of the 79 women with pulmonary tuberculosis isolate themselves from their children to avoid contaminating them.The majority of the patients (56.5%) had stopped cooking and only one third (1/3) of the work was done by the maid, while the rest was done by the patient.Out of 115 patients registered in our study, 102 (88,7%) presented a sexual life disturbance. We observe that 30% did not experience any disturbance of menstruation while the abnormalities of menstruation were in 70% more in interruption of menstruation.

Table N°1: Socio-demographic Characteristics of patients

Parameters	Classification	Number	Frequency
Gender	Female (n=100%)	115	100%
Age, yr	15-25	29	25,23%
	25-35	54	46,95%
	35-45	32	27,82%
Marital Status	Married	56	48,69%
	Divorced	17	14,78%
	Widowed	20	17,39%
	Single	22	19,13%
Education	Unschooled	65	56,52%
	Primary school	33	28,69%
	Secondary School	14	12,17%
	Graduate or Higher	3	2,60%
Occupation	Customer	25	21,73%
	Students	5	4,34%
	Official	6	5,21%
	Household	79	68,69%
Contamination	Others	25	21,73%
	Unknew	77	66,95%
	Familial Contact	13	11,30%

Table N°2: Clinical and sexual Characteristics of patients

	Status	Number	Frequency
Microscopy	Extra-pulmonary and smear negative TB	13	11,30%
	Pulmonary (smear positive) TB	102	88,69%
HIV Status	Positive	15	13,04 %
	Negative	100	86,95%
Contraception	Breathing	10	8,69%
	Contraception	18	15,65%
	No one	87	75,65%
Sexual abnormalities	Yes	13	11,30
	No	102	88,69
Disturbance of menstruation	Yes	76	66,08%
	No	39	33,91%

IV. Discussion

We will discuss the patients' age, marital status, occupation, education level, HIV status, performance of household chores, menstrual cycle disorder

Tuberculosis is one of the main infectious causes of death in women and therefore of lost years of life. The average age of our patients was 31 years [16-45]. These results show that tuberculosis affects the most active segment of the population, it mainly affects women who are economically productive and of childbearing age. H. Souhi et al.[11] in Morocco found an average age of patients of 30 years with extremes of 20 to 40 years, Max R. et al.[12] in South Africa observe a mean age of 32 years with extremes ranging from 26 to 39 years.V. Bhanothu et al. in India on tuberculosis in women of childbearing age found a mean age of 29years with extremes from 16 to 44years. Sylvia M. LaCourse et al.[13]in the USA found a mean age of 26 years with extremes ranging from 22 to 31 years. Tuberculosis is a disease that can affect all socio-professional status;however, it affects much more the lower socioeconomic status. In our study we observed that housewives are the most represented in a proportion of 68.69%. These results shown that tuberculosis is a disease that occurs in subjects with unfavorable socioeconomic conditions including poverty, promiscuity, malnutrition... The results are variable from one country to another. Von Sudhakar et al.[15] in India show that 17.5% of the patients had reported huge socioeconomic problems. Max R. et al.[12] in South Africa found 8.2% of health workers. The high rates of our patients were not educated (56.52%). These results are close to those found by Sylvia M. LaCourse et al.[13] observed that 40.7% of patients had a higher level of education. These results reflect the overall level of schooling in Niger and Tuberculosis is a disease that occurs in subjects with unfavorable socioeconomic conditions, which is relatively low. In this study, all marital status were affected by the disease and married women were the most affected with 56 cases out of 115, i.e. 48.69%. Studies have also shown similar results;Sylvia M. LaCourse et al.[13] find 36.6% of single women, Von Sudhakar et al.[15] mentioned 28% of married women in their series. It can also cause divorce (common among younger spouses) and widows faced social issue[17]. Pulmonary tuberculosis is represented in 68.7% of cases. H. Souhi et al. observed 77% pulmonary tuberculosis and 23% extra-pulmonary tuberculosis. Claude Bernard Uwizeye et al.[16] find 68% pulmonary tuberculosis and 32% extra-pulmonary tuberculosis. HIV infection is the most important known risk factor for the development of tuberculosis. In fact, the two diseases are frequently associated in the same person. These results indicate high rates of women with HIV/TB co-infection (13%) very high to Niger HIV rate (0,4%).

Claude Bernard Uwizeye et al.[16] show that HIV infection is known in 58% of women with TB. Max R.[12] et al. found 64.8% of women with TB to be HIV positive. These results confirm all the studies that suggest a correlation between tuberculosis and HIV especially in countries with high HIV prevalence.

V. Conclusion

This study demonstrated that tuberculosis affects the most active women population which are economically productive and of reproductive age in Niger, substantial and severe consequences among women of reproductive age such as family and sexual life, disturbance of menstruation and high rate of HIV-associated TB.

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KADRI Sani, et. al. "Epidemiological Characteristics of Tuberculosis in Women of Reproductive Age in a DOTs Centre of Niamey (Niger)." *IOSR Journal of Dental and Medical Sciences (IOSR-JDMS)*, 20(9), 2021, pp. 06-09.