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Incidence and Impact of Gynecological Disorders in Women Undergoing Multi-Drug Resistant Tuberculosis (MDR-TB) Treatment

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A B S T R A C T

Background: Treatment for Multi-Drug Resistant Tuberculosis (MDR-TB) is costly, time-consuming, and ineffective. It could cause damage to pregnant women and their babies during the pregnancy.

Objective: To explore the frequency of gynecological problems in women on MDR tuberculosis treatment.

Methodology: The current cross-sectional study was conducted at the Department of Gynecology DHQ hospital Narowal from august 2019 to October 2020 after taking permission from the ethical committee of the institute. A total of 240 women diagnosed with MDR-TB aged 15 to 54 years without children were included in this study while individuals with Hysterectomy and salpingo-oophorectomy were excluded. All the information we got was with consent. Everyone spoke. The online G-power tool used to create a 95% confidence interval. Qualitative data was calculated by IBM SPSS version 24. Ethical certificate was taken from ethical committee of the DHQ hospital Narowal.

Results: The present study included 240 participants in total, ranging in age from 15 to 54 years. Individuals between the ages of 15 and 24 were 56 (23.3%), between the ages of 25 and 34 were 97 (40.4%), between the ages of 35 and 44 were 70 (29.1%) and between the ages of 45 and 54 were 17(7%). Among study cases, 194 (80%) were premenopausal and 34 (14.1%) was post-menopausal. Individuals with MDR-TB therapy had high prevalence of itchy and irritated vaginal discharge ((65%) and 34.16%) correspondingly). Four commonly prescribed contraceptives were explored. Among study cases,10 (4.1%) of women used I.U.D.s, 11.4% oral contraceptives, 29.5% injectable and 54.58% barrier approaches. The occurrence of ploy menorrhagia and olig-menorrhagia in women getting MDR-TB treatment is 40.8% and 59.1%, correspondingly.

Conclusion: The study concluded that patients with MDR-TB experienced gynecological problems. MDR-TB premenopausal patients experienced polymenorrhea, dysmenorrhea, and irregular menstruation and menorrhagia.

Keywords: Incidence; Gynecological; Multi-Drug Resistant Tuberculosis; Treatment

Introduction

The global burden of tuberculosis (TB) is a significant public health concern, with approximately 10 million new cases reported annually (World Health Organization, 2022). Among these, multi-drug resistant tuberculosis (MDR-TB) poses a critical challenge due to its resistance to the most effective anti-TB medications, isoniazid and rifampicin. MDR-TB treatment involves prolonged use of multiple potent drugs, often leading to severe side effects and complications.[1] While extensive research has been conducted on the epidemiology, treatment, and outcomes of MDR-TB, less attention has been given to the specific impact of MDR-TB treatment on women's health, particularly regarding gynecological disorders. Women undergoing MDR-TB treatment are subject to unique physiological and hormonal factors that may interact with treatment regimens, leading to various gynecological issues. These disorders can range from menstrual irregularities and reproductive health concerns to more severe conditions such as pelvic inflammatory disease (PID), vaginal infections, and disruptions in hormonal balance. In addition to obstetrics, it makes a disproportionate contribution to female mortality and morbidity. Mycobacterium tuberculosis is the leading cause of maternal mortality, particularly when associated with HIV.[2] 70% of HIV-positive women die from the virus's infection rather than obstetric complications, according to research on maternal mortality in Johannesburg, South Africa.[3]

Treatment for MDR-TB is costly, time-consuming, and ineffective. Isoniazid and rifampicin are not effective against multidrug-resistant tuberculosis (MDR-TB).[7] It could cause damage to pregnant women and their babies during the pregnancy, birth, and recovery phases. Young people can get MDR-TB, particularly women of reproductive age. Severity and morbidity in mothers and fetuses may rise in the absence of therapy.[9-10] even in cases when teratogenic second-line medicines are used. Infertility is typically the sole result of menstrual abnormalities, and many women are unaware that they even have them. Particularly impacted are women who are fertile (15–45 years old). There may be discomfort, atypical menstrual discharge, oligo-menorrhea, dysmenorrhea, and polymenorrhea.[11,12] Pregnancies with MDR-TB were frequently associated with low birth weight, early delivery, pregnancy loss, and maternal death. An early research links MDR-TB to conditions related to the gynaecology.[8] These outcomes need to be verified in female patients using MDR-TB medicine.

Given the potential for these issues to exacerbate the overall burden of MDR-TB treatment, understanding their incidence and impact is crucial. Gynecological disorders in women undergoing MDR-TB treatment can lead to reduced quality of life, additional medical complications, and challenges in adherence to treatment. Moreover, these disorders might contribute to increased social stigmatization and decreased mental well-being, impacting not only the individual but also their families and broader communities. Furthermore, the psychological stress and stigma of MDR-TB can have indirect effects on women's reproductive health. Stress-induced hormonal changes might lead to alterations in menstrual cycles, while societal stigma can result in reduced access to gynecological care or reluctance to seek help due to fear of discrimination. So, the current study was carried out to determine the Frequency of Gynecological Problems in Women on MDR Tuberculosis Treatment.

Objective

To explore the frequency of gynecological problems in women on MDR tuberculosis treatment.

Methodology

The current cross-sectional study was conducted at the Department of Gynecology DHQ hospital Narowal from August 2019 to October 2020 after taking permission from the ethical committee of the institute. Ethical certificate was taken from ethical committee of the DHQ hospital Narowal. A total of 240 women diagnosed with MDR-TB aged 15 to 54 years without children were included in this study while individuals with Hysterectomy and salpingo-oophorectomy were excluded. All the information we got was with consent. Everyone spoke. The online G-power tool used to create a 95% confidence interval. All the data was collected by using a questionnaire designed for this study. Qualitative data was calculated by IBM SPSS version 24. The mean and standard deviation were determined for the quantitative data while frequency and percentages were determined for the qualitative data.

Results

The study included 240 participants in total, ranging in age from 15 to 54 years. Figure 1 presents a summary of the sample's demographic distribution by age range, ranging from 15 to 54 years old. Individuals between the ages of 15 and 24 were 56(23.3%), between the ages of 25 and 34 were 97 (40.4%), between the ages of 35 and 44 were 70(29.1%) and between the ages of 45 and 54 were 17 (7.0%).

Among study cases, 194 (80%) were premenopausal and 34 (14.1%) was post-menopausal. Individuals consuming MDR-TB therapy had high prevalence of itchy and irritated vaginal discharge ((65%) and 34.16%) correspondingly). Four commonly prescribed contrace-ptives were explored. 10 (4.1%) of women used I.U.D.s, 11.4% oral contraceptives, 29.5% injectable and 54.58% barrier

Table 1. Frequency for clinical features of MDR-TB participants

Variables	N (%)
Age Groups (Years)	
15 to 24	56 (23.3%)
25 to 34	97 (40.4%)
35 to 44	70 (29.1%)
45 to 54	17 (7.0%)
Marital Status	
Married	156 (65.0%)
Single	66 (27.5%)
Divorced	8 (3.33%)
Widow	10 (4.1%)
Pre-menopausal	
Yes	194 (80.0%)
No	46 (19.1%)
Post-menopausal	
Yes	34 (14.1%)
No	206 (85.83%)
Menstrual Cycle	
Regular	102 (42.5%)
Irregular	138 (57.5%)
If irregular then	
Before MDR-TB Treatment	82 (34.16%)
After MDR-TB Treatment	158 (65.8%)
Define Irregular	
Poly-Menorrhea	98 (40.8%)
Olig-Menorrhea	142 (59.1%)

Dysmenorrhea	
Yes	144 (60.0%)
No	98 (40.8%)
Vaginal Discharge	
Yes	106 (44.1%)
No	134 (55.8%)
Vaginal Discharge	
Itch	156 (65%)
Foul Smell	183 (76.2%)
Contraception Uses	
I.U.C.D.	10 (4.1%)
Pills	28 (11.6%)
Injectable	71 (29.5%)
Barriers	131 (54.58%)

approaches.

The occurrence of ploy menorrhagia and olig-menorrhagia in women getting MDR-TB treatment is 40.8% and 59.1%, respectively (Table 1).

Discussion

The current study explored that married women receiving M.D.R. therapy for gynecological disorders were more prevalent (65%) as compared to divorced (3.33%) and widow (4.1%). The study conducted by Sharma et al. does not take into consideration the possibility that drug-resistant tuberculosis in pregnant women may be treated. Specifically, the study compared T.B. medication in pregnant and non-pregnant women.[11] The evidence of gynecological problems following MDR-TB therapy is further supported by our study. Sexual dysfunction, dysmenorrhea, and vaginal discharge appeared after MDR-TB treatment. In our study individuals on MDR-TB therapy had high prevalence of itchy and irritated vaginal discharge (65%) and 34.16%) correspondingly. Previous study reported 136 individuals had irregular cycles, while 100 had regular ones. Menstrual cycles were monitored both before and after taking medicine.[12]

In this study following MDR-TB therapy, irregular cycles increased in 65.8% of the patients. Due to irregular cycles, 40.8% individuals experienced polymenorrhea, whereas 59.1% individuals experienced oligomenorrhea. A group of 240 individuals participated in the classification of four affordable methods of contraception. The results of current study are not similar with the research conducted by Alene.[13]

In our study most the women did not use birth control, barriers and injectable. Out of the 240 participants, 131(54.58%) chose the barrier over the injection. It is more common for young women in rural areas of Pakistan to use injectable contraception that contains M.D.R. strains as reported by Nariyal F. Fikree and colleagues conducted study on contraception in Karachi, Pakistan.[14] Condoms, withdrawal, oral medications, injectables, and IUDs are among the topics covered in this study, along with questions on their affordability, appropriateness, and effectiveness. Birth control was used by men and women at comparable rates in the previous study.[15] Since the majority of the individuals in our research were from rural areas, there was a high prevalence of injectable drug use. Another sign of MDR-TB treatment was vaginal discharge, with 65% mentioning discomfort and 76.2% reporting a foul smell. MDR-TB or untreated TB causes infertility in women.[16] Ovarian function may be impacted

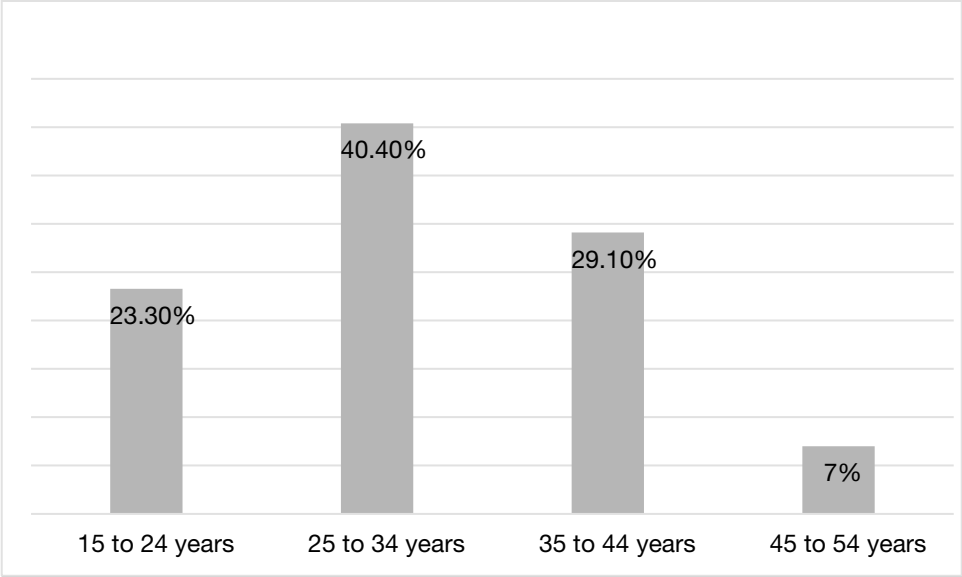

Figure 1. Age group of study cases

by adhesions in the pelvic cavity, uterine lining, fallopian tube, and ciliary function loss, as well as ovarian cyst development. Multidrug-resistant tuberculosis (MDR-TB) can lead to infertility in women and complicate therapy.[17,18]

Conclusion

The study concluded that patients with MDR-TB experienced gynecological problems. MDR-TB premenopausal patients experienced polymenorrhea, dysmenorrhea, and irregular menstruation and menorrhagia. Identifying the predisposing variables in women with gynecological disorders may help with early diagnosis and risk factor avoidance due to long-term therapy, which will enhance quality of life.

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