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ORIGINAL ARTICLE

Gynecological Issues among Women Receiving M.D.R. Treatment for Tuberculosis

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ABSTRACT

Background: MDR-TB (multidrug resistant tuberculosis) is becoming a global concern, particularly in developing countries. Most clinical approaches emphasize infection control and managing drug-resistance. Moreover, little focus is placed on the reproductive health problems that women suffer from. In this research, efforts are made to assess the prevalence and pattern of gynecological problems among women undergoing treatment for MDR-TB.

Methods: From May 2021 to June 2023, a descriptive cross-sectional study was conducted at Gynae and Obs department of DHQ hospital KDA. The study sample consisted of 59 women between the ages of 15-49 who were on MDR-TB therapy for a minimum of three months. Information pertaining to classifiable abnormalities of menstruation, inflammatory disease of the pelvic region, and other relevant reproductive disorders was gathered using formalized interviewing techniques and through scrutinized documents. The data analysis was done with SPSS v25, calculating p-values in relation to the respondent's age to determine whether any associations would exist.

Results: Menstrual disturbances were frequent, with 30.5% reporting amenorrhea, 25.4% experiencing oligomenorrhea, and 16.9% suffering from menorrhagia. Dysmenorrhea affected 37.3% of participants. Reproductive tract infections were also common; pelvic inflammatory disease was found in 35.6%, vaginal infections in 40.7%, and dyspareunia in 23.7%. No statistically significant association was found between age and any gynecological symptom ($p > 0.05$).

Conclusion: Gynecological issues are highly prevalent in women receiving MDR-TB treatment, regardless of age. These findings highlight the need for integrated reproductive health services within TB management programs to address an often-neglected aspect of patient well-being.

Keywords: MDR-TB, Women's health, Menstrual disorders, Reproductive tract infections, Tuberculosis treatment, Amenorrhea, Pelvic inflammatory disease.

INTRODUCTION

Globally, tuberculosis continues to be one of the most common infectious diseases. The rise of multidrug-resistant tuberculosis (MDR-TB) is another challenge to its treatment. MDR-TB treatment is associated with long and complicated drug regimens, with high cellular toxicity and numerous side effects beyond the respiratory system. Besides many other concerns, protocols directed to control the infection and prevent its transmission traditionally disregard the condition of patients' reproductive health, especially among women of childbearing age[1-3].

The treatment of MDR-TB in women is likely to be associated with a range of gynecological problems such as abnormal menstrual cycles, pelvic inflammatory disease, and endocrine disorders. These problems are detrimental to the patient's wellbeing and can lead to non-compliance, psychosocial issues, and reduced fecundity. Low income areas tend to overlook such complications, whether diagnostic or therapeutic, which poses a major gap in sosed care continuum[4-6].

There is scant research on how the treatment of MDR-TB alters reproductive and menstrual health, despite the known effects of long-term antibiotic treatment and chronic illness. Most TB control programs focus on the microbial eradication of TB, routinely attending to the surgical, but not the gender-specific, elements of female patients' needs. Since a significant proportion of TB cases are women in a number of countries, it is crucial to understand their gynecological ailments trying to cope with treatment[7-9].

This study was conducted to explore the prevalence and nature of menstrual disturbances and reproductive tract issues in women receiving MDR-TB therapy. By highlighting these overlooked concerns, the findings aim to support the integration of comprehensive reproductive health monitoring into MDR-TB treatment protocols.

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METHODOLOGY

This descriptive cross-sectional study was conducted from May 2021 to June 2023 at Gynae and Obs department DHQ hospital KDA. It aimed at evaluating the prevalence and type of gynecologic complications in women receiving care for multidrug-resistant tuberculosis (MDR-TB). 'Participants provided written informed consent. Ethical approval was granted from the Institutional Review Board of [Insert Study Location Here}] and was conducted while maintaining confidentiality and voluntary participation where the subjects could withdraw anytime without any negative impact on their care'.

Written consent was gained from all participants. Ethical consent for the study was granted by the [Insert Study Location Here] Institutional Review Board, complying with ethical guidelines regarding privacy, voluntary participation, and withdrawal at any time without consequences to received care.

The study incorporated a total of 59 female patients which were obtained through non-probabilistic consecutive sampling. Participants were drawn from the MDR-TB registry as well as outpatient centers where treatment menstruation was routinely performed. Each patient who qualified and aligned with the set criteria was invited to take part in the study until the required sample size was accomplished.

Inclusion Criteria

- Women aged 15 to 49 years
- Currently receiving treatment for confirmed MDR-TB
- Willing to provide informed consent
- Having completed at least 3 months of MDR-TB therapy (to allow for onset of possible side effects)

Exclusion Criteria

- Known pre-existing gynecological conditions prior to TB diagnosis
- Patients with HIV co-infection (due to overlapping symptoms)

- Women who were pregnant at the time of interview
- Those on hormonal therapy for other conditions

Data were gathered through interviewer-administered structured questionnaires, which were designed to capture both demographic and clinical information. The questionnaire included sections on:

- Age, residence, marital status, education level, BMI, and lifestyle habits (e.g., smoking)
- Duration and details of MDR-TB therapy (including specific medications and adherence)
- Menstrual patterns before and during treatment (amenorrhea, oligomenorrhea, menorrhagia, dysmenorrhea)
- History of reproductive tract infections such as pelvic inflammatory disease, vaginal discharge, and dyspareunia

The participants were also asked about their use of contraception and any noticeable changes in their menstrual or reproductive health since starting MDR-TB treatment. Whenever feasible, medical records were reviewed to confirm clinical history and drug regimens.

The data were coded and entered into Statistical Package for Social Sciences (SPSS) version 25 for analysis. Descriptive statistics such as frequencies and percentages were used to summarize participant characteristics and gynecological symptoms. Chi-square test was applied to explore associations between age and gynecological conditions, with a p-value of <0.05 considered statistically significant. Results were presented in tables and graphs for clarity.

RESULTS

The demographic data showed that the majority of women undergoing MDR-TB treatment were in the age group of 25 years and above, accounting for 62.7% of the total sample. This indicates that tuberculosis and its multidrug-resistant form are more prevalent among women in their reproductive age group. A slightly higher proportion belonged to rural areas (52.5%) compared to urban areas (47.5%), suggesting a greater disease burden or limited access to early healthcare interventions in rural settings. Marital status also played a key role; 67.8% of the women were married, which may relate to increased awareness or healthcare-seeking behavior during antenatal visits. Education level revealed that over half (55.9%) had only primary-level education or none, reflecting a potentially vulnerable population with limited health literacy and access to preventive care.

Nutritional status and lifestyle factors showed notable patterns. About 40.7% of the participants were either underweight or overweight, indicating the dual burden of malnutrition and poor diet regulation often associated with chronic illnesses like tuberculosis. Exposure to smoking, either active or passive, was reported in nearly 29% of women a risk factor that can exacerbate both pulmonary and reproductive health issues. Interestingly, a large number of women (66.1%) were not using any form of contraception, possibly due to misconceptions about fertility during TB treatment or limited reproductive health counseling during therapy.

The comparison of menstrual disorders between age groups (<25 vs. ≥25 years) revealed no statistically significant association. Amenorrhea was observed in 30.5% of the total participants, and its distribution did not significantly differ by age (p = 0.860), indicating that the absence of menstruation may be uniformly linked to the physiological stress or side effects of MDR-TB treatment rather than age itself. Similarly, oligomenorrhea (25.4%) and menorrhagia (16.9%) were not significantly associated with age (p = 1.000 for both), suggesting these irregularities were equally distributed among younger and older women. Although dysmenorrhea was slightly more frequent among younger women, the p-value (0.470) still indicates no statistically meaningful difference. Overall, menstrual disturbances appear to be common across all age groups among women receiving MDR therapy, likely due to systemic illness and medication impact.

The analysis of reproductive tract infections, including pelvic inflammatory disease (PID), vaginal infections, and dyspareunia, also showed no significant differences based on age group. PID was reported in 35.6% of the women and was slightly more common among those aged ≥25, but this association was not statistically significant (p = 0.853). Vaginal infections (40.7%) and dyspareunia (23.7%) showed similar patterns with p-values of 1.000, confirming no meaningful age-based differences. These results suggest that reproductive tract infections are prevalent regardless of age and may be directly related to the compromised immunity or prolonged antibiotic exposure associated with MDR-TB treatment.

Table 1: Demographic Profile of Participants (n = 59)

Variable	Category	n	%
Age	< 25 years	22	37.3%
	≥ 25 years	37	62.7%
Residence	Urban	28	47.5%
	Rural	31	52.5%
Marital Status	Married	40	67.8%
	Unmarried	19	32.2%
Education Level	Primary or less	33	55.9%
	Secondary+	26	44.1%

Table 2: Nutritional and Lifestyle Characteristics

Variable	Category	n	%
BMI Category	Normal	35	59.3%
	Underweight/Overweight	24	40.7%
Smoking Exposure	Yes	17	28.8%
	No	42	71.2%
Contraceptive Use	Yes	20	33.9%
	No	39	66.1%

Table 3: Menstrual and Gynecological Symptoms by Age Group (n = 59)

Condition	Present n (%)	Absent n (%)	p-value
Amenorrhea	18 (30.5%)	41 (69.5%)	0.860
Oligomenorrhea	15 (25.4%)	44 (74.6%)	1.000
Menorrhagia	10 (16.9%)	49 (83.1%)	1.000
Dysmenorrhea	22 (37.3%)	37 (62.7%)	0.470

Table 4: Reproductive Tract Infections by Age Group

Condition	Present n (%)	Absent n (%)	p-value
Pelvic Inflammatory Disease	21 (35.6%)	38 (64.4%)	0.853
Vaginal Infections	24 (40.7%)	35 (59.3%)	1.000
Dyspareunia	14 (23.7%)	45 (76.3%)	1.000

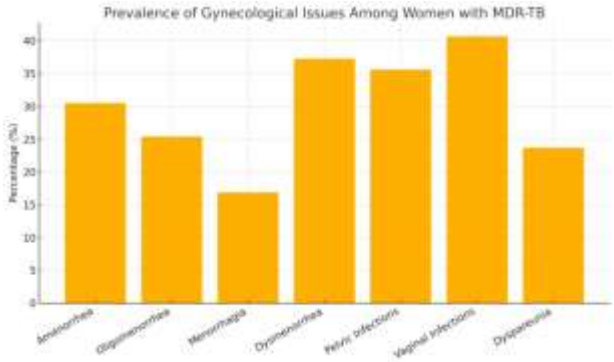

Figure 1: Graph showing the prevalence of key gynecological issues among women receiving MDR-TB treatment. It visually compares the percentage of participants reporting symptoms such as amenorrhea, oligomenorrhea, menorrhagia, dysmenorrhea, pelvic infections, vaginal infections, and dyspareunia.

DISCUSSION

The findings of this study highlight the considerable burden of menstrual disturbances and reproductive tract infections among

women receiving treatment for multidrug-resistant tuberculosis. The most commonly reported symptoms included amenorrhea, oligomenorrhea, and dysmenorrhea, along with infections such as pelvic inflammatory disease and vaginal infections. These symptoms were found across all age groups, with no statistically significant association with age, suggesting that they are more likely to be related to the physiological and pharmacological effects of prolonged TB treatment rather than age alone.

Previous research supports the observation that second-line anti-TB drugs can interfere with hormonal balance. Aminoglycosides, linezolid, and ethionamide have been associated with systemic toxicity, and some case reports have linked these agents to menstrual irregularities[10-12]. Stuides noted that adverse drug effects in MDR-TB patients were underreported, especially those related to gynecological health, due to the prioritization of survival over quality-of-life outcomes during treatment[13-15].

In our study, amenorrhea was reported in over 30% of participants, which aligns with earlier data suggesting that chronic infections and long-term drug therapy can suppress the hypothalamic–pituitary–gonadal axis. A similar pattern was reported by studies that menstrual cessation was frequent in women undergoing MDR-TB therapy, especially in cases where nutritional deficiencies and weight loss were also present. These disruptions were reversible in some but not all patients, depending on the duration of drug use and recovery of body weight[16-18].

The reproductive tract infections observed in this study may also be explained by immunosuppression caused by chronic disease and malnutrition. A study emphasized the susceptibility of female genital tract mucosa to secondary infections during systemic TB treatment, which may also go unnoticed due to limited gynecological screening in TB clinics. Pelvic inflammatory disease, noted in over one-third of our sample, can further complicate reproductive health, particularly in women of childbearing age[19, 20].

Interestingly, no significant association was found between the occurrence of these symptoms and demographic factors such as age or education. This suggests that the side effects are primarily driven by treatment and disease burden, rather than social determinants alone. However, the low rate of contraceptive use in our study (only 33.9%) raises concern, especially since many of these women were married and within reproductive age. It may reflect either misconceptions about fertility during TB or lack of integrated reproductive health counseling in TB programs.

These findings stress the urgent need to integrate gynecological evaluation and counseling into the routine management of female MDR-TB patients. Reproductive health complaints should not be dismissed as secondary or unrelated, especially in long-term treatment settings. Incorporating sexual and reproductive health services into TB care would improve not only the quality of life but also treatment adherence and psychological well-being.

CONCLUSION

This study confirms that gynecological complications, including menstrual irregularities and infections, are common among women receiving MDR-TB treatment. These issues were present across all age groups and appeared to be associated more with treatment effects than with age or socioeconomic status. Despite their prevalence, such complications often remain underreported and under-addressed in TB programs. The findings call for a more holistic approach to MDR-TB care that incorporates regular gynecological assessments and patient education to improve overall health outcomes and treatment compliance among affected women.

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