

Original Article

STUDY OF ENDOMETRIAL TUBERCULOSIS FROM RURAL, INDUSTRIAL & ADIVASI AREAS – A COMPARATIVE ANALYSIS

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ABSTRACT

BACKGROUND: Endometrial tuberculosis is found to be very important cause of subfertility due to damage to endometrium & fallopian tube as well as pelvic organs.

MATERIALS & METHODS: This study was conducted at Gice Clinic Kalyani, from 2015 April to 2021 December. 300 cases were selected for study from different areas in and around Kalyani, West Bengal. The participants were subjected to menstrual blood TB-RTPCR on Day 2 of menstruation and endometrial biopsy on Day 19-21 respectively.

OBSERVATION: It is significant to note that, out of 300 cases, 52 cases were found to be TB-PCR positive which included adivasi (26%), industrial (18%), & rural (8%) areas, whereas endometrial granuloma were seen in adivasi 6 (23%), industrial 4 (22.2%), & rural 2 (25%) – which may be important causative factors for subfertility.

CONCLUSION: Hence TB-PCR test as well as endometrial biopsy was found to be very important procedures for diagnosis & treatment of subfertility, chronic pelvic diseases & ill health, especially in low resources areas.

KEY WORDS: Menstrual blood, TB PCR test, Endometrial Biopsy, Endometrial tuberculosis.

INTRODUCTION

Genitourinary TB is a common form of extra-pulmonary TB (EPTB) worldwide (27%) with genital TB alone accounting for 9 percent of all EPTB cases.¹ Genital tuberculosis is one of the major causes for severe tubal disease which leads to subfertility. Unlike pulmonary tuberculosis (TB), the clinical diagnosis of genital tuberculosis is difficult because in most of the cases the disease is either asymptomatic or has varied clinical presentations.² In addition to the subtle presentation of the disease, there is low sensitivity and specificity of the routine

diagnostic methods and the insufficiency of the organism in clinical samples accounting for the lower detection of genital tuberculosis. Early detection of endometrial tuberculosis is not only necessary to diagnose subfertility but also prevent socio-economic problems, particularly from low resource areas.

TB-PCR test is usually performed to confirm the presence of non-viable AFB & or viable AFB especially in a patient with history chronic ill health, or history of non-genital tuberculosis, whereas endometrial biopsy can be done to identify any involvement of deep endometrium

or basal endometrium.

MATERIALS & METHODS

This study was conducted at Gice Clinic, Kalyani, Nadia, West Bengal from 2015 April to 2021 December.

Area: Rural, Industrial and Adivasi area

Total Cases: We studied 300 cases, 100 each from rural, industrial, & adivasi areas who had history of primary subfertility.

Test: TB-PCR tests of menstrual blood were done in 2nd day of menstruation & endometrial biopsies were done in between D₁₉ - D₂₁ of menstrual in all positive cases of TB-PCR, for Histopathology Examination.

Collected data was recorded in Microsoft Excel Sheet and data analysis was done by mean, median, percentage calculation.

RESULTS

In our study most of the patients who had the history of subfertility > 5 years were seen in rural (70%), industrial (60%), adivasi (71%) areas (Table 1).

Areas	1-2 years	1-5 years	>5 years
RURAL (N=100)	6 (6%)	24 (24%)	70(70%)
INDUSTRIAL (N=100)	12 (12%)	28 (28%)	60 (60%)
ADIVASI (N=100)	9 (9%)	20 (20%)	71(71%)

Table 1: Distribution according to Period of Subfertility (N =300)

On further enquiry (Table 2) it was seen that adivasi women had maximum positive family history of tuberculosis, about 10% cases husband, 9% cases other family members & in 7% cases relatives was previously diagnosed with tuberculosis. Among women staying at industrial area 7% women's husband was diagnosed with tuberculosis before, 5% and 6% positive history found among family members & relatives respectively. In rural areas positive

cases was minimum, only 3% husband, 2% family members & 1% relatives had history of tuberculosis.

Areas	Husband	Own Family	Relatives
RURAL (N=100)	3 (3%)	2 (2%)	1 (1%)
INDUSTRIAL (N=100)	7 (7%)	5 (5%)	6 (6%)
ADIVASI (N=100)	10 (10%)	9 (9%)	7(7%)

Table -2: Distribution according to Family history of Tuberculosis (N-300)

It was also observed that - 3 (3%) rural, 5(5%)- industrial & 2(2%) adivasi women had the past history of tuberculosis in lung as compared to 1(1%), 2 (2%) & 4(4%) women having history of tuberculosis in intestine. All cases were treated as per Government of India guidelines.

Areas	Lung	Intestine	Others
RURAL (N=100)	3 (3%)	1 (1%)	---
INDUSTRIAL (N=100)	5 (5%)	2 (2%)	1(1%) (lymph node)
ADIVASI (N=100)	2 (2%)	4 (4%)	1(1%) (Skin)

Table -3: Distribution according to past history of Tuberculosis (N=300)

In (Table 4) it appeared that TB-PCR test, done on 2nd day of menstruation, were found to be positive in 52 cases & were seen more in adivasi 26 (26%) areas as compared to industrial 18(18%) & rural 8(8%) areas which significantly indicate that proper awareness, improvement of socio-economic conditions & proper hygiene may prevent endometrial or genital tuberculosis in these areas.

Areas	Positive	Negative
RURAL (N=100)	8 (8%)	92 (92%)
INDUSTRIAL (N=100)	18 (18%)	82 (82%)
ADIVASI (N=100)	26 (26%)	74 (74%)

Table -4: Distribution according to TB-PCR Test Results (N=300)

Endometrial biopsy was done in between D -19 and D -22 of menstrual cycle to all 52 TB-PCR positive cases from different areas which showed that endometrial granuloma was almost found to be same in rural 2 (25%), industrial 4 (22.2%) & adivasi 6(23%) areas. On further investigations many of them had tubal block, tubo-ovarian mass, adhesions etc.

Areas	Positive	Negative
RURAL (N=8)	2 (25%)	6 (75%)
INDUSTRIAL (N=18)	4 (22.2%)	12 (77.8%)
ADIVASI (N=26)	6 (23.1%)	20 (76.9%)

Table -5: Distribution according to Endometrial Biopsy Findings (N=52)

DISCUSSION

Endometrial tuberculosis is caused by mycobacterium tuberculosis (rarely mycobacterium bovis and / or atypical mycobacteria). It is mostly secondary to TB of the lung or others organs with infection reaching through haematogenous, lymphatic route or direct spread from abdominal cavity TB.³A study on FGTB among patients with subfertility from India has shown an incidence of 3-16 percent.⁴ A survey by the Indian Council of Medical Research (ICMR) reported that the prevalence of

FGTB in India has increased from 19 percent in 2011 to 30 percent in 2015.⁵

All of the patients (n=300) who had past history of tuberculosis (lung, intestine) or chronic pelvic pain, menstrual irregularities & ill health or history of tuberculosis either in family members or relatives - were undergone TB-PCR test on the 2nd day of menstruation. It was interesting to observe that out of 300 cases 52 cases were found to be positive which includes adivasi 26(26%) (n=100), industrial 18 (18%) (n=100) & rural 8 (8%) (n=100) areas. This finding was of great significance as higher incidence of Tuberculosis was found in adivasi & industrial areas as compare to rural area. S.N.Tripathi found ⁶ that the incidence of genital tuberculosis in subfertility and tubal factor subfertility were 3 and 41%, respectively. A study done by A.G Radhika and others⁷ at Delhi found 44.4% positive cases among infertile women. In another study done by L.Chaubey and others⁸ found 65% cases of subfertility was positive for tuberculosis among 126 patients.

On further investigations (endometrial biopsy) and analysis, it was observed that endometrial granuloma was seen in - adivasi 6 (23.1%) (n=26), industrial 4 (22.2%) (n=18) & rural 2 (25%) (n=8), which may be the important causative factors to destroy endometrial lining or tubal damage/and or block or adhesion in the pelvic organs - leading to subfertility. J.B.Sharma and others⁹ found endometrial granuloma at 28.6% of genital tuberculosis patients.

CONCLUSION

Most of the patients of genital tuberculosis are diagnosed in advanced stage with scarring, severe fibrosis and adhesions. This may be a significant reason that treatment outcomes of genital tuberculosis, especially for subfertility are very poor. Rapid diagnosis and treatment are essential to decrease morbidity and mortality of genital TB. It is eagerly required to have a good sensitive and specific diagnostic test of genital TB to diagnose the disease easily and in an earlier stage. Screening for genital TB should be a part of subfertility and menstrual abnormality evaluation protocol in endemic regions.

Hence, proper counselling, awareness programs, TB-PCR test (D₂ of menstruation), endometrial

biopsy (D19-D20) were not only found to be very important steps to prevent subfertility caused by tuberculosis but also helped to implement immediate treatment to prevent further damage to the pelvic organs.

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