



## A STUDY ON CO-RELATION BETWEEN INFERTILITY AND FEMALE GENITAL TUBERCULOSIS

Prof. Dr Bharti  
Maheshwari

Dr Srishti Singh\*

\*Corresponding Author

### ABSTRACT

**Background:** Female genitourinary tuberculosis (FGTB) is an important cause of infertility in women of reproductive age group. The disease remains undetected due to its asymptomatic nature and lack of sensitive tests. This study was conducted with the aim of detecting the prevalence of genital tuberculosis in infertile women.

**Aim And Objectives:** To evaluate the rate of female genital tuberculosis in patients of infertility.

**Method And Materials:** Questionnaire survey was done among 100 infertile women in 6 months from May 2020 to October 2020. Females of reproductive age group from 18 years to 35 years with the duration of infertility of more than 2 years were included.

**Results:** Total 100 infertile females were included in the study. Out of 100 subjects, 81 cases had primary infertility & 19 had secondary infertility. There was positive history of extra genital TB in past in 30 cases and family history was positive in 26 cases. FGTB was diagnosed in 14 females in past on basis of diagnostic methods used in alone or in combination.

**Conclusion:** FGTB is common in our population and women presenting with infertility should be evaluated for genital tuberculosis. A high degree of suspicion and combination of histopathological and microbiological tests are important methods for the detection of genital tuberculosis.

### KEYWORDS :

#### INTRODUCTION

Tuberculosis is a common infectious disease around the world which usually caused by the bacterium *Mycobacterium tuberculosis*. Despite the availability of effective anti-tubercular drugs, tuberculosis still remains an important cause of morbidity and mortality across the globe. Female genital tuberculosis is a form of extra pulmonary TB which is found particularly in areas where pulmonary or other forms of extrapulmonary TB are common. The global prevalence of GTB is estimated to be 8-10 million cases with a rising incidence, particularly as a result of HIV pandemic and the emergence of multidrug resistant strains.<sup>1,2</sup>

Genital tuberculosis in females affects fallopian tubes, uterine endometrium, ovaries, cervix, uterine myometrium and vagina/vulva. The most common mode of transmission to the genital tract is through haematogenous spread from lungs, other sites being kidney and intestine. Genital TB causes infertility, menstrual irregularity and pregnancy loss in women. It is thus well recognized as an important etiological cause for infertility in areas with high prevalence of tuberculosis. This disease not only causes tubal obstruction and dysfunction but also impairs implantation due to endometrial involvement and ovulatory failure from ovarian involvement.<sup>3</sup> According to Novak's,<sup>8</sup> the tubes are already affected when the diagnosis of tubercular endometritis is made. The characteristic feature is the presence of yellowish grey tubercles on the peritoneal surface of the tubes and mesosalpinx with fimbrial end of tube remaining open in half the cases.

The burden of tuberculosis is largely underestimated as most of the patients are asymptomatic and usually diagnosed during evaluation for infertility. A study on female genital TB among patients with infertility from India shows an incidence of 3-16%. Despite the availability of various techniques, diagnostic dilemma for genital TB still exists. A high degree of suspicion and elaborate history and clinical examination are essential for diagnosis. Laparoscopic findings cannot help in absolute diagnosis in early stages, however it is a valuable procedure for obtaining tissue specimen for culture and other tests.<sup>4,5,6</sup>

Infertility is one of the commonest presentations of genital TB.

Other clinical symptoms & signs can be fever, anorexia, menstrual disorders ranging from menorrhagia to amenorrhea, chronic pelvic pain, abnormal vaginal discharge, urinary or defecation problems, lymphadenopathy, abdominal masses, ascites, doughy feel of abdomen, fornix tenderness, TO masses etc.

Diagnosis of FGTB is often limited to clinical suspicion. A pelvic USG is of help in presence of TO masses. Definitive diagnosis of FGTB is possible only by the isolation of *Mycobacterium tuberculosis* bacteria from genital tract or histological demonstration of granuloma. The material taken for culture or biopsy is the endometrium and menstrual discharge.<sup>7</sup> The best time for collecting endometrial sample is several days before expected menses when tubercles reach maximum growth.

The polymerase chain reaction (PCR) is a rapid method for detection & quantification of few DNA copies with high sensitivity & specificity, the results being available in 1 day. PCR may be positive with only 1-10 organisms /ml.<sup>8</sup> On hysteroscopy, no classical features are described but intrauterine adhesions, scarring or narrowing of cavity may be found.

Short - course chemotherapy (DOTS) for 6-9 months has been found to be effective for medical treatment of FGTB.<sup>9,10</sup> The chances of pregnancy in females suffering from genital TB have so far been poor (5%) even after completion of treatment.<sup>11</sup>

#### AIMS AND OBJECTIVES

To evaluate the prevalence of female genital tuberculosis in patients of infertility.

#### MATERIALS AND METHODS

Questionnaire survey was done among 100 infertile women in 6 months from May 2020 to October 2020. Females of reproductive age group from 18 years to 35 years with the duration of infertility of more than 2 years were included.

#### SOURCE OF DATA-

Healthcare workers (paramedics and others) working in the institute at Muzaffarnagar Medical College and Hospital, and

other hospitals in Muzaffarnagar .

**DURATION** – 6 months

**SAMPLE SIZE** - 100

**RESULT**

Total 100 patients were included in the study.

**AGE**

AGE	NUMBER
18-25 yrs	24
26-30 yrs	34
30-35 yrs	42

Most women were in the age group of 25-30 years followed by 30-35 years. Mean age of patients included in the study was 30 years.

**TYPE OF INFERTILITY**

Primary infertility	81
Secondary infertility	19

Out of total 100 infertile females, 81 had primary infertility & 19 had secondary infertility.

**METHOD BY WHICH FGTB DIAGNOSED**

METHOD	NUMBER
PCR	7
Laparoscopy	5
Hysteroscopy	1
Histopathology examination	1
TOTAL	14

Out of total 100 infertile females, 14 were found to have suffered from female genital TB. Out of these 14 women, 11 presented with primary infertility while 3 women had secondary infertility. Therefore, the total prevalence of genital tuberculosis found in our study was 14%.

The patients were considered to be FGTB positive or negative on basis of diagnostic methods used in alone or in combination in past.

**FAMILY HISTORY OF TB OR HISTORY OF CLOSE CONTACT**

In this study, family history was positive in 26 cases.

FAMILY HISTORY PRESENT	FAMILY HISTORY ABSENT
26	74

**Past History Of Extragenital TB**

In present study significant association has been found between positive past history and laparoscopic findings statistically. Out of 21 cases of positive past history, laparoscopy showed positive findings in 14 cases (70%).

PAST HISTORY PRESENT	PAST HISTORY ABSENT
30	70

**ATT INTAKE**

Presently taking ATT	Completed ATT course	Did not take ATT
3	10	1

**SYMPTOMS**

SYMPTOMS	NUMBER
Chronic pelvic pain	3
Irregular menses	3
Vaginal discharge	2
Scanty menses	3
Pelvic mass	2
Dysmenorrhea	1
Amenorrhoea	0

**DISCUSSION**

In present study maximum patients 42(42%) were in age group of 30 to 35 years. Statistically significant association had been found between age and infertility specially primary infertility. Mean age in our study was 26.3 years which was comparable to studies of Roy Rozati et al<sup>12</sup> & N Gupta et al<sup>13</sup>. In our study, 30 cases (30%) had positive H/o extra genital TB and 26 cases (26%) had family H/o TB. In contrast to present study, U N Jindal et al<sup>14</sup> found positive past history in 73.5% cases & positive family history in 10.1% of infertile patients. Chronic pelvic pain in 3 patients (21.4%) and irregular menses in 3 patients (21.4%) were the most common symptoms in patients apart from infertility. In our study we found that most of these symptomatic patients were found positive on PCR & laparoscopy for FGTB.

As far as diagnostic test were concerned, out of 14 subjects suspected of suffering from FGTB, 7 cases (50.2%) were positive on PCR, 5 cases (35.7%) were positive on laparoscopy, 1 cases (7.14%) were positive on HPE and 1 cases (7.14%) were positive on hysteroscopy. Our results depicted that PCR is the best method of diagnosing FGTB and a combination of PCR and laparoscopy is totally dependable for the diagnosis. In clinically suspected symptomatic cases, PCR could be the technique of choice for its higher sensitivity and specificity. Hysteroscopy and HPE were found non specific. There was also statistical association found between laparoscopy & dye test (p=0.001), it means that if the tubes were not damaged grossly on laparoscopy, in majority of cases normal bilateral free spillage was present.

**CONCLUSION**

Female genital tuberculosis is an underestimated disease mainly due to its asymptomatic nature and lack of sensitive tests. It is detected most frequently when a women presents with unexplained infertility. Therefore screening for genital TB should be routinely done for the evaluation of infertility. Exact planning and action for the prevention and treatment of genital tuberculosis can reduce the infertility prevalence and prevent the negative consequences of infertility in addition to the reduction of tuberculosis mortality. PCR represents a rapid and sensitive method for detection of mycobacterium DNA in early FGTB cases. The patients of FGTB found in early stages by PCR and where laparoscopy and dye tests are normal, ATT can improve the conception rates.

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