SAS Journal of Medicine ISSN 2454-5112
SAS J. Med., Volume-1; Issue-4 (Nov-Dec, 2015); p-141-143
Available online at http://sassociety.com/sasjm/

Research Article

Prevalence of Positive Tb PCR in Endometrial Curettage Samples after Evacuation of Retained Products of Conception in Cases of Recurrent Abortion

Ratanoo Lata[1], Gupta Juhi[2], Bhardwaj Neelam[3], Trivedi Swati[4], Agarwal Chetna[5], Patel Tushar[6]
[1]Assistant Professor, [2]Senior Resident, [3]Professor and Unit Head, [4]III Year P.G. Resident, [5]II Year P.G. Resident, [6]II Year P.G. Resident; Department of Obstetrics and Gynaecology, Zenana Hospital, S.M.S. Medical College Jaipur 302004, Rajasthan, India

***Corresponding author**
Dr. Lata Ratanoo
Email: drlataratanoo@gmail.com

Abstract: To study the prevalence of genital tuberculosis in the patients who have history of recurrent abortion by identifying mycobacterial DNA with polymerase chain reaction in endometrial curettage samples after evacuation of retained products of conception. In this study we studied 50 patients who had history of recurrent abortion admitted with concurrent abortion; incomplete/missed. After evacuation of retained production of conception endometrial curettage samples saved in normal saline and investigated for mycobacterium by PCR technique. In results Out of the 50 patients investigated 12 were positive for mycobacterium by PCR and rests were negative. In conclusion Genital tuberculosis may be one of the causes of recurrent abortion. Female genital tuberculosis is a paucibacillary disease and if detected earlier and treated can improve conception rate and live birth rate significantly. So this is an important finding and it should be further investigated.

Keywords: Recurrent abortion, genital tuberculosis, TBPCR

INTRODUCTION

Tuberculosis remains a major health problem in many developing countries including India and in these countries genital tuberculosis is responsible for a significant proportion of women presenting with infertility, ectopic pregnancies and abortion. The prevalence of latent tuberculosis infection in India ranges from 9-80% in various populations. Globally, around nine million people develop tuberculosis out of which 1.3 million die every year [1].

T.B. accounts for 9% of deaths among women 15-44 years of age compared with war (4%), HIV (3%) and heart disease (3%) [2]. Genital tuberculosis causes tubal obstruction and dysfunction and impairs implantation due to endometrial involvement and ovulatory failure from ovarian involvement [3]. It is often a secondary complication primarily from lungs. Primary infection of female genital organs is very rare. Due to nonspecific signs and symptoms the disease often poses a diagnostic dilemma for gynaecologists [4, 5].

According to ACOG, repeated miscarriage or recurrent pregnancy loss is defined as having two or more miscarriage. After three miscarriages, a thorough physical exam and testing are recommended. Genital tuberculosis may be one of the causes for repeated abortion. In this study we will investigate the prevalence of Genital tuberculosis in endometrial curettage samples by TBPCR.

The PCR is a technique shows rapid detection and quantification of few DNA copies with high sensitivity and specificity within 1-2 days [6]. Because extra pulmonary tuberculosis is paucibacillary so in endometrial samples AFB smears are almost always negative besides the long period required for their culture.

METHODS

This prospective study was carried out in a tertiary care hospital in Zenana, SMS Hospital, and Jaipur. 50 patients presented with abortion incomplete / missed abortion attending hospital who had previous history of 2 or more abortions were enrolled after signing an informed consent form.

All patients with other known causes of abortions were excluded from the study. The patients were subjected to detailed history and clinical examination, routine biochemical and hematological investigations – including erythrocyte sedimentation rate, Mantoux test and chest x-rays. Evacuation was done as usual way and curettage samples of endometrium were saved and kept in saline and sent for PCR amplification.

RESULTS

Among 50 patients TB PCR was found positive in 12 patients. Table 1 shows maximum number of patients belonged to 26-30 years age group. Table 2 shows that among 12 positive patients, 7 patients were living in crowded area. Table 3 shows that among TBPCR positive patients, family history of T.B. was found in 1 patient, history of close contact with T.B. patient was in 2 patients. Past history of T.B. found in 1 patient, Table 4 shows scanty period and oligomenorrhoea was present in 15% of positive patients. Lower abdominal pain was presenting symptom in 33%. Patients, ESR raised above 20 mm/hr and positive mantoux were in 25% of patients. History of weight loss was present in 15% of patients.

Table 1: Distribution of TB PCR Positive Patients according to Age

Age (in years)	No. of patients	TB PCR Positive	% of TB PCR positive patients
15-20	3	0	0.00
21-25	16	4	8.00
26-30	22	6	12.00
31-35	5	2	4.00
36-40	4	0	0.00

Table 2 : Distribution of TB PCR Positive Patients according to area where they live

Area	No. of TB PCR Positive Patients
Crowded area	7
Uncrowded area	5

(Area: According to WHO accepted standards for floor space.)

Table 3: Distribution of cases according to History of exposure

	No. of TB PCR Positive Patients
Family history of T.B.	1
History of close contact with T.B. patient	2
Past history of tuberculosis (Abdominal TB and Pulmonary TB)	1

Table 4: Presenting symptoms in TB PCR Positive Patients

	No. of TB PCR Positive patients	% of TB PCR Positive patients
Scanty Period	2	15
Irregular Cycles	1	8.3
Oligomenorrhoea	2	15
Loss of appetite	1	8.3
Vaginal discharge	3	25
Menorrhagia	1	8.3
Weight loss	2	15
Lower abdominal Pain	4	33.3
Dyspareunia	2	15
Dysmenorrhoea	1	8.3
Malaise	0	0
Constipation	0	0
Elevated ESR	3	25
Positive Mantoux test	3	25
Radiologic evidence of pulmonary T.B.	1	8.3

DISCUSSION

Genitourinary tuberculosis is mostly a secondary manifestation of primary pulmonary or abdominal tuberculosis [3]. Approximately 30% of cases of extra pulmonary tuberculosis involve the urogenital tract [7]. Newer methods for diagnosis are mycobacterium growth inhibitor tube, BACTEC culture system and polymerase chain reaction. Detection by microscopy needs 10,000 bacilli/ml, by LJ culture 1000 bacilli/ml, by BACTEC 10-100 bacilli/ml and by PCR <10 bacilli/mi. In BACTEC a growth index of more than 10 gives a strong suspicion of tuberculosis. Then a secondary smear is made from the suspected well to confirm AFB [8].

Multiplex PCR means amplification of various sequences simultaneously in one tube. The advantage of this test is that it reveals the false negatives, because each amplification provides an internal control for the other and false positives are very rare due to limitation of pre and post-analytical variation to single tube per reaction [6]. The PCR test has been extensively studied and data show 87 - 100% sensitivity and 92 - 99.8% specificity.

In study by Tripathy SN *et al.;* the conception rate was 19.2% while the live birth rate was only 7.2% in genital tuberculosis positive patients [9]. In our study curettage samples of endometrium of 50 patients investigated to rule out genital tuberculosis in cases of repeated abortions and 24% were positive for genital tuberculosis by PCR.

Shaheen *et al.;* studied 7628 gynecological outpatients to assess frequency of genital tuberculosis as diagnosed by histopathologic and culture tests [10]. They found 7% of OPD patients to be suffering from infertility and 2.3% of patients to have genital tuberculosis, and concluded that it is very essential for a gynecologist, especially in tuberculosis endemic countries, to anticipate the possibility of genital tuberculosis in infertile patients.

Sharma *et al.;* studied 28 infertile women to conclude that genital tuberculosis diagnosed either by positive TB PCR or positive histopathologic or culture tests had a strong association with intrauterine adhesions leading to Asherman's Syndrome [11].

Gupta *et al.;* analyzed 40 women with genital tuberculosis as diagnosed with histopathologic, culture and PCR results [12]. Monika D Kohli *et al.;* concluded that in paucibacillary endometrial tuberculosis the positive detection rate was found to be significantly higher for PCR compared to other methods. They used hupB gene which can differentiate between mycobacterium tuberculosis and mycobacterium bovis [13].

Bhanu *et al.;* reported a 100% correlation between PCR findings and laporoscopic findings classified as 'definitive' [6]. Kulshrestha V *et al.;* emphasized the role of PCR even in the absence of other evidence of genital TB. Because these women responded to ATT and conceived, it seems more likely that they had very early subclinical disease, without significant damage to the tubes and endometrium. This study suggested DNA PCR testing of endometrial aspiration in old women with infertility who live in areas endemic for GTB, and recommended the initiation of ATT in all women who test positive even if no other evidence of GTB exists [14].

CONCLUSION

Genital tuberculosis may be one of the possible causes of recurrent abortions. Female genital tuberculosis is a paucibacillary disease and if detected earlier and treated can improve conception rate and live birth rate significantly. PCR may be a useful adjunct to diagnostic modalities in genital tuberculosis.

REFERENCES

1. World Health Organization. Global tuberculosis control: Surveillance, planning, financing. WHO Report 2009; Geneva. Available at www.who.int./tb/publicaton/global report/2009/key points.
2. Advocacy TB; A Practical Guide 1999, WHO Global Tuberculosis Programme.
3. Roy H, Roy S, Roy S; Use of polymerase chain reaction for diagnosis of endometrial tuberculosis in high risk sub fertile women in an endemic zone. J Obstet Gynecol India, 2003; 53: 260-3.
4. Nagpal M, Pal D; Genital Tuberculosis – A diagnostic dilemma in OPD Patients. J Obstet Gynecol India. 2001; 51 (6): 127-31.
5. Mani R, Nayak S, Kagal A, Deshpande S, Dandge N, Bharadwaj R; Tuberculous endometritis infertility: A bacteriological and histopathological study. Indian J Tuberc. 2003; 50: 161.
6. Bhanu NV, Singh UB, Chakraborty M; Improved diagnostic value of PCR in the diagnosis of female genital TB leading to infertility. J Med Microbiol, 2005; 54: 927-31.
7. Kim SH; Urogenital tuberculosis. In : Pollack HM, Mcclennan BL, Dyer RB, Kenney PJ, Clinical urography; 2nd; Philedelphia, PA Saunders, 2000 : 1193-1228.
8. Katoch VM, Sharma VD; Advances in the diagnosis of mycobacterial diseases. Indian J Med Microbiol, 1997; 15: 49-55.
9. Tripathy SN, Tripathy SN; Infertility and pregnancy outcome in female genital tuberculosis. Int J Gynecol Obstet, 2002; 76: 159-63.
10. Shaheen R, Subhan F, Tahir F; Epidemiology of genital tuberculosis in infertile population. J Pak Med'Assoc, 2006; 56(7): 306-9.
11. Sharma JB, Roy KK, Pushparaj M; Genital tuberculosis: an important cause of Asherman's Syndrome in India. Arch Gynecol Obstet, 2008; 277: 37-41.
12. Gupta N, Sharma JB, Mittal S, Singh N, Misra R, Kukreja M; Genital tuberculosis in Indian infertile patients. Int J Gynecol Obstet, 2007; 97: 135-8.
13. Kohli MD, Nambam B, Trivedi SS, Sherwal BL, Arora S, Jain A; PCR – Based Evaluation of Tuberculous Endometritis in infertile women of North India. J Reprod Infertil, 2011; 12: 9-14.
14. Kulshrestha V, Kriplani A, Agarwal N, Singh UB, Rana T; Genital tuberculosis among infertile women and fertility outcome after antitubercular therapy. Int J Gynecol Obstet, 2011; 113: 229-34.