

Prevalence of Endometrial Tuberculosis in Infertility Cases

Dr. A. Shanti Sri¹, Dr. Nazia Khannum², Dr. P. Padmaja³, Dr. Frsha. N. Taraporewalla⁴

¹Associate Professor, Department of obstetrics and Gynaecology. Deccan College of Medical Sciences, Hyderabad, India

²Assistant Professor, Department of obstetrics and Gynaecology. Deccan College of Medical Sciences, Hyderabad, India

³Professor, Department of obstetrics and Gynaecology. Deccan College of Medical Sciences, Hyderabad, India

⁴Post graduate, Department of obstetrics and Gynaecology. Deccan College of Medical Sciences, Hyderabad, India

Abstract: ***Aim of the Study:** To study the prevalence of endometrial tuberculosis in infertility cases. **Materials and Methods:** A one year prospective study was carried out at Dept of Gynaecology and Obstetrics, Princess Esra Hospital, DCMS, Hyderabad from Jan 2014 to Dec 2014. Endometrial curettings obtained from 100 cases of primary and secondary infertility were included. The diagnosis of endometrial tuberculosis was made on histological grounds with H&E stained slides, Z-N staining for AFB positivity, PCR by nucleic acid amplification, culture of AFB on solid L J medium and liquid culture by BACTEC method. **Results:** 12 cases of tuberculous endometritis were diagnosed.*

Keywords: Genital Tuberculosis, Female infertility

1. Introduction

Tuberculosis as a cause of infertility is still a major problem in developing countries. The precise incidence of FG TB is difficult to ascertain as it is underreported due to asymptomatic cases and lack of reliable confirmatory investigations.(1,2). Females with genitourinary Tuberculosis constitute about 0.5% of all TB cases, out of which 50% are genital tuberculosis cases. In infertility patients, incidence of FG TB varies from 3-16% in India, with higher incidences reported from apex institutes like All India Institute of Medical Sciences. According to the WHO Global Tuberculosis Control Report 2007, Genital Tuberculosis has been declared by WHO as a National Emergency in 1993. The incidence of genital tract TB is 0.69% in Australia, 0.07% in the United States, less than 1% in Finland, 4.2% in Saudi Arabia, 5.6% in Scotland, and 19% in India.(3)

2. Materials and Methods

The present study was conducted at Dept of Gynaecology and Obstetrics, Princess Esra Hospital, DCMS, Hyderabad from Jan 2014 to Dec 2014. 100 cases of primary and secondary infertility were included in the prospective study and endometrial curettings were taken to detect the incidence of Genital Tuberculosis as a cause for female infertility. A thorough history and physical examination was carried out, including detailed history of any hormonal abnormalities or any other known cause of infertility, as well as male infertility in the partner.

All patients were evaluated with Routine investigations (including CBP with ESR, S. TSH, S. Prolactin, S. FSH and S. LH, GTT) and relevant investigations for infertility were carried out. Among the 100 patients, 40 patients belonged to the unexplained infertility group, including those with history and investigations suggestive of tuberculosis. In

these patients, endometrial curettings were obtained premenstrually or on the first day of the cycle and sent for evaluation for Tuberculosis.

3. Ethical Consideration

Written informed consent was taken from all the patients and Institutional Ethical clearance was obtained from the Ethics committee before the start of the study.

4. Results

Out of the 100 cases, 83 had primary infertility and 17 had secondary infertility. 88% of the cases belonged to the age group of 21-30 years. 85% of the patients suspected to have genital Tuberculosis belonged to the age group of 21-30 years. In patients suspected to have genital Tuberculosis, 95% presented with primary infertility and 5% with secondary infertility. In this study, the majority of patients suspected to have genital tuberculosis belonged to socioeconomic class 4 and class 5. Among the 40 cases suspected to have genital Tuberculosis, Z-N staining was positive in 3 (7.5%), PCR in 12 (30%), liquid culture by BACTEC method in 2 (5%), solid culture in 1 (2.5%), and histopathology showing granulomatous lesions in 6 (15%) cases.

5. Discussion

Female Genital Tuberculosis is a rare disease in developed countries, but is a frequent cause of chronic pelvic inflammatory disease and infertility in the developing countries. This disease presents clinically in the reproductive age group, with 80% cases being around 20-40 years of age. Infertility is the commonest presentation due to involvement of the fallopian tubes (blocked and damaged tubes), endometrium (non reception and damaged endometrium

with Asherman's syndrome) and ovarian damage with poor ovarian reserve and volume. (4, 5).

Leading to Infertility and Conception Rate after ATT.
// JK Science; Jan-Mar2009, Vol. 11 Issue 1, p31

The incidence of FGTB in this study is 12% which correlates with incidence of FGTB in India i.e. 19%. Among the 40 cases suspected to have Genital Tuberculosis, Z-N staining was positive in 3 (7.5%), PCR in 12 (30%), liquid culture by BACTEC method in 2 (5%), solid culture in 1 (2.5%), and histopathology showing granulomatous lesions in 6 (15%) cases. In a study conducted by Kohli et al, among 100 infertile cases, one was positive by Z-N staining, none by culture and 13 by PCR (7). In a study conducted by Suman Puri, among 65 patients, 28 were positive by the PCR method (8). In a study conducted by Thangappah et al on 72 infertile women, 6 (8.3%) were positive by Z-N staining, 4 (5.6%) were culture positive and 18 (36.7%) were positive by the PCR method (6). Our study demonstrates that PCR is the best method for diagnosing FGTB.

Method	Positive	Negative
Smear for AFB	3(7.5%)	37
Liquid culture	2(5%)	38
Solid culture	1(2.5%)	39
PCR	12(30%)	28
HISTOLOGY	6(15%)	34

6. Conclusion

FGTB prevalence varies in different countries, being much more common in developing countries. It is responsible for upto 16% cases of infertility in developing countries. High index of suspicion is required, as many cases are usually asymptomatic in early stages, when it can be treated without causing significant damage to genital organs. Whereas later stages and untreated FGTB can cause permanent sterility through tubal damage and endometrial destruction.

References

- [1] Kumar S Female genital tuberculosis, In: Sharma SK, Mohan A. (eds) Tuberculosis, 2nd edition Delhi: Jaypee, 2009; 441-8.
- [2] Neonakis IK, Spandidos DA, Petinaki E, Female genital tuberculosis: a review. *Can J Infect Dis* 2011; 43: 564-72.
- [3] Varma, T, *Glob. libr. Women's med.*, (ISSN: 1756-2228) 2008; DOI 10.3843/GLOWM. 10034.
- [4] Schaefer G, Female genital tuberculosis. *Clin Obstet Gynaecol*, 1976; 19: 223-39
- [5] Sharma JB, Tuberculosis and obstetric and gynaecological practise in Studd J, Tan SL, Chervanek FA, (editors), *Progress in obstetric and gynaecology* Philadelphia: Elsevier, 2008; 18: 395-427.
- [6] Evaluating PCR, Culture and histopathology in the diagnosis of female genital tuberculosis. Thangappah RB, Paramasivan CN, Narayanan S. *Indian J Med Res*. 2011 Jul; 134: 40-6.
- [7] Kohli R, Punia RS, Kaushik R, Kundu R, Mohan H. Relative value of immunohistochemistry in detection of mycobacterial antigen in suspected cases of tuberculosis in tissue sections. *Indian J Pathol Microbiol*. 2014 Oct-Dec; 57(4): 574-8. doi: 10.4103/0377-4929.142667.
- [8] Puri, Suman; Bansal, Bhavana. Diagnostic Value of Polymerase Chain Reaction in Female Tuberculosis