

Prevalence of *Chlamydia trachomatis* Infection in Fertile and Infertile Women; A Molecular and Serological Study

Rashidi, Batool (M.D.)¹; Chamani Tabriz, Leili* (M.D., M.P.H.)²; Haghollahi, Fedyeh (M.Sc.)¹; Ramezanzadeh, Fatemeh (M.D.)¹; Shariat, Mamak (M.D.)³; Rahimi Forooshani, Abbas (Ph.D.)⁴; Daneshjoo, Faezeh (B.Sc.)²; Akhondi, Mohammad Mehdi (Ph.D.)²; Asgari, Soheila (B.Sc.)^{2,5}

1. Vali-e-Asr Reproductive Health Research Center, Tehran University of Medical Sciences, Tehran, Iran.

2. Reproductive Biotechnology Research Center, Avicenna Research Institute, ACECR, Tehran, Iran.

3. Maternal-Fetal-Neonatal Health Research Center, Tehran University of Medical Sciences, Tehran, Iran.

4. Department of Biostatistics and Epidemiology, School of Public Health, Tehran University of Medical Sciences, Tehran, Iran.

5. M.Sc. Student, Department of Biostatistics and Epidemiology, International Branch of Tehran University of Medical Sciences, Kish Island, Iran.

Abstract

Introduction: *Chlamydia trachomatis* is one of the most common sexually transmitted infections (STIs) in the world. About 80% of the infected women are asymptomatic, while ascending infections such as pelvic inflammatory disease (PID) and the resultant infertility due to fallopian tube occlusion are common manifestations. Due to the higher prevalence of *C. trachomatis* infection in infertile than fertile women and the importance of screening for this infection in different types of infertility, this study was undertaken to compare two serologic and ELISA methods for the diagnosis of the bacteria in the two groups.

Materials and Methods: In this cross-sectional study, the participants included 233 infertile women attending Vali-e-Asr Infertility Clinic and 225 fertile women attending the Prenatal Clinic and Emergency Labor of Imam Khomeini Hospital. Each participant completed a researcher-devised questionnaire and subsequently 2 mls of peripheral blood for serological studies and 15 ml of the first catch urine (FCU) for molecular detection of the germ through Polymerase Chain Reaction (PCR) method were obtained.

Results: PCR results showed *C. trachomatis* infection in 29 (13.8%) infertile and 19 (11.1%) pregnant participants with no significant statistical differences. Serological results showed presence of *Chlamydia* IgG in 20 (8.6%) infertile and 11 (4.9%) fertile participants and *Chlamydia* IgM was observed in 2 (0.9%) infertile and 4 (1.8%) fertile participants with no significant differences.

Conclusion: The prevalence of *C. trachomatis* infection among fertile and infertile women by serological and molecular methods was not significantly different. However, considering the high specificity and sensitivity of PCR, it could be used as a noninvasive screening technique for *C. trachomatis*, compared to the invasive method of blood sampling.

Key Words: *Chlamydia trachomatis*, Infertility, Polymerase Chain Reaction (PCR), Pregnancy, Serology, Sexually Transmitted Infection (STI), Tubal occlusion.

* **Corresponding Author:** Leili Chamani Tabriz, Reproductive Biotechnology Research Center, Avicenna Research Institute, Shahid Beheshti University, Velenjak, Tehran, Iran. P.O. Box 19615-1177.

E-mail: lchamani@avicenna.ac.ir

Received: Dec 21, 2008; **Accepted:** Mar 8, 2009