# CHLAMYDIA TRACHOMATIS INFECTION AND DIAGNOSTIC PROBLEMS

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## SUMMARY

**Present study was done in 108 women. 95 were infertile women and 13 control cases were taken. Their cervical swabs were subjected to Pharmacia Enzyme Labelled immunosorbent Assay technique (ELISA) for diagnosis of Chlamydia Trachomatis. Taking this as the base of positive or negative test, the smears were subjected to Geimsa stain for seeing inclusion bodies and also for polymorphonuclear leukocytes/HPF of 5 or more test. 24.21% cases were positive for Chlamydia Trachomatis by ELISA test. None of 10 control were positive while all 3 cases of follicular conjunctivitis clinically diagnosed as trachoma were positive by ELISA. None out of all 108 cases had inclusion bodies. 26.09% of ELISA positive cases had 5 or more polymorphs and 12.5% of ELISA-ve cases also, statistical in significant difference (P value> 0.05). Inclusion body technique does not seem to be useful at all while the criteria of 5 and more polymorphs needs further studies.**


## *INTRODUCTION*

The first isolation of the trachomatis agent was carried out by Macchiavelle in Peau who inoculated a volunteer with the cultured agent in 1946.Identification of the agent in the genital tract of a ten year old girl with chronic vaginitis was reported by Thygesun and Stone (1946). Gordon and Quan in 1967 introduced a tissue culture method for islation of Chlamydia. However Chlamydiaculture is rather difficult and costly affair. So attempts were made to have easy, quick and cheak method of diagnosis of Chlamydia. Girling et al (1985) found that routine diagnosis of trachomatis by Papanicolaou stained smear was very unreliable. Even with culture results known there were three times as may false positive as true positive results.

In the present study an attempt was made to know the reliability of Geimsa stain taking Pharmacia Enzyme Labelled immunosorbent assay technique (ELISA) as the basis of Chlamydia trachomatis infection.

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*MATERIAL AND METHODS*

Present study was done in the department of Obstetrics and Gynaecology of Mahatma Gandhi Institute of Medical, Sciences Sevagram. The study was carried out in 108 patients. 95 females studied had infertility with or without signs and symptoms of genital tract infection. 10 patients were taken as control, 5 parous women and 5 pregnant women. Additional 3 test control were patients of follicular conjunctivitis clinically diagnosed as trachoma. Cervical swab was tested for Chlamydia by ELISA. The specific antigen of trachoma and cervical chlamydia infection is the same although the type specific antigen is different. Since Pharmacia kit detects only group specific antigen conjunctival chlamydia detection was carried out as the possible control.

In addition all the swabs were subjected to Geimsa staining and slides were screened for inclusion body and polymorphs (blind study) by study of inclusion body as well as finding of 5 or more polymorphs per high power field in geimsa stained smears of material (Moscicki et al 1987) was done.

*OBSERVATIONS*

ELISA test was positive in the study group in 24.21% of infertile women. All 10 control cases were negative and all 3 test controls of trachoma were positive by ELISA. Characteristic Chlamydia inclusion body was not seen in a single slide irrespective of positive or negative results of ELISA test (Table I). First screening was blind followed by second screening with known ELISA

**TABLE I**

Elisa and inclusion body in Geimsa Stain

| Groups | Chlamydia test | | Inclusion body |
|---|---|---|---|
| | Positive | Negative | |
| Study 95 | 23 (24.21%) | 72 (75.79%) | 0 |
| Control 10 | 0 | 10 (100%) | 0 |
| Trachoma 3 cases | 3 (100%) | 0 | 0 |

**TABLE II**

Chalamydia positive by ELISA and Polymorphs in Geimsa Stain

| Group | Chalamydia postive by ELISA 23 | | Chlamydia negative by ELISA 72 | |
|---|---|---|---|---|
| | 5 PMN/HPF | 5PMP/HPF | 5PMN/HPF | 5PMN/HPF |
| 95 | 17 | 6 | 63 | 9 |
| | 73.91% | 26.09% | 87.5% | 12.5% |

positivity. An attempt was made to screen the slides according to the presence of 5 or more polymorphs per high power field in Geimsa stained slide of cervical smear. This was also done as a blind study. A total of 15 cases (15.79%) in study group showed these features. Amongst the Chlamydia positive patients (23), 6 (26.09%) had cervical smears with 5 or more polymorphs per high power field as compared to 9 (12.5%) of Chlamydia negative patients. So with this criteria sensitivity of Geimsa was 26% and specificity 87.5% (Table II).

## *DISCUSSION*

A study was carried out by Moscicki et al (1987) to predict value of polymorphs in endocervical stains of cervicitis cases in 193 sexually active females aged 12-20 years. The finding of at least 5 or more polymorphs per high power field was associated with Chlamydia infection. The presence of more cells was not a better predictor of infection. These authors stated that using the criteria very few infections will go undetected and this method can be used as screening measure for endocervical Chlamydia infection. In our study (little smaller group) the sensitivity of technique has turned out to be only 26% however the speficicity is 87.5%. So this technique needs further studies before using it as a mass screening measure for Chlamydia trachomatis infection. Inclusion body was not seen in a single slide. This technique did not seem to be of any use.

## *CONCLUSION*

Geimsa stain for inclusion bodies for diagnosis of Chlamydia trachomatis doesnot seem to be of any use while the criteria advocated by Moscicki et al 1987 needs further studies before planning to use this as a screening method for Chlamydia trachomatis infection.

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