RESULTS

This study was carried out on two groups of non pregnant women of child bearing age.

Group I (cases) : 200 women suffering from any lower genital tract symptoms or signs.

Group II (Control): 100 women not suffering from any symptoms or signs of lower genital tract.

Two endocervical swabs were taken from each woman for detection of the presence of C. trachomatis by Giemsa stain, DFA, and tissue culture.

All tests were done in the Microbiology Department of Benha and Mansoura Faculty of Medicine.

Results of Giemsa stained smears (Table 1):

All specimens taken were examined for the presence of characteristic intracytoplasmic masses of chlamydial infection which either, red to purple stained masses of elementary bodies, or the larger blue to purple stained initial bodies (Figure 1 and 2).

Group I (cases): 43 women (21.5%) were positive for the presence of chlamydia in their specimens, while 157 (78.5%) were negative.

Group II (control): Only 8 women (8%) were positive for the presence of chlamydia in their specimens, while 92 (92%) women were negative.

Total number of positive cases in both Group I and Group II was 51.
The difference between the two groups is statistically significant.

Examination of Giemsa stained smears revealed presence of inflammatory reaction in many positive cases manifested by the presence of polymorphunclear cells.

Results of direct fluorescent antibody (DFA) staining technique (Table 2)

All specimen taken were examined for the presence of apple green fluorescence contrasted by the reddish brown background of the counter stain (figure 3 and 4).

Group I (cases): 51 women (25.5%) were positive for the presence of chlamydia in their specimens, while 149 (74.5%) were negative.

Group II (control): Only 11 women (11%) were positive for the presence of chlamydia in their specimens, while 89 (89%) were negative.

The total number of positive cases in both Group I and Group II was 62.

The difference between the two groups is statistically significant.

According to the number of elementary bodies seen on fluorescence/field in positive cases (Table 3):

Group I (cases): 10 smears (19.6%) showed from 5 to 20 elementary bodies, 21 smears (41.2%) showed from 21 to 40 elementary bodies, 13 smears (25.5%) showed from 41 to 80 elementary bodies, while 7 smears (13.7%) showed more than 80 elementary bodies.

Group II (control): 3 smears (27.275%) showed from 5 to 20 elementary bodies, 5 smears (45.45%) showed from 21 to 40 elementary bodies, and 3 smears (27.275%) showed from 41 to 80 elementary bodies. No smears showed more than 80 elementary bodies.

There is no significant difference between the number of elementary bodies as regard to positive results of DFA technique, while number of 21 to 40 elementary bodies had a higher significant incidence of C. trachomatis than other numbers of elementary bodies.

Results of C. trachomatis by tissue culture technique stained with iodine (Table 4):

All specimens were cultured on BGM cell monolayer and stained with iodine for detection of red brown to dark brown intracytoplasmic inclusions of C. trachomatis in pale yellow BGM cells (Figure 5).

Group I (cases): 59 women (29.5%) were positive for the presence of chlamydia in their specimens, while 141 (70.5%) were negative.

Group II (control): Only 14 women 14%) were positive for the presence of chlamydia in their specimens, while 86 (86%) were negative.

Total number of positive cases in both Group I and Group II was 73.

The difference between the two groups is statistically significant.

Table (5) showed the comparison between tissue culture (reference test) and Giemsa stain (screening test) regarding the diagnosis of chlamydial infection: the sensitivity of Giemsa stain was 69.86%, while its specificity was 100%, its positive predictive value 100% and its negative predictive value 91.16%.

Table (6) showed the comparison between tissue culture (reference test) and DFA stain (screening test) regarding the diagnosis of chlamydial infection, the sensitivity of DFA was 80.82%, while its specificity was 98.67%, its positive predictive value 95.16%, and its negative predictive value 94.11%.

Prevalence of C. trachomatis infection as regards to age: (Table 7)

Group I (cases): 104 women (52%) were aged from 16 to 25 years, 63 (31.5%) women were aged from 26 to 35 years, and 33 (16.5%) women were aged from 36 to 45 years.

Out of 104 women aged from 16 to 25 years, 26 (25.0%) were positive for chlamydia by Giemsa stain, 31 (29.81%) were positive by DFA and 38 (36.54%) were positive by tissue culture.

Out of 63 women aged from 26-35 years, 16 (25.4%) were positive for chlamydia by Giemsa stain, 17 (26.98%) were positive by DFA, and 19 (30.16%) were positive by tissue culture.

Out of 33 women aged from 36 to 45 years, 1 (3.03%) was positive for chlamydia by Giemsa stain, 3 (9.09%) were positive by DFA, and 2 (6.06%) were positive by tissue culture.

Group II (control): 58 women (58%) were aged from 16 to 25 years, 34 (34%) women were aged from 26-35 years, and 8 (8%) women were aged from 36 to 45 years.

Out of 58 women, aged from 16 to 25 years old, 6 (10.34%) women were chalmydia positive by Giemsa stain, 8 (13.79%) were positive by DFA, and 10 (17.24%) were positive by tissue culture.

Out of 34 women aged from 26 to 35 years , 2 (5.88%) were chlamydia positive by both Giemsa stain and DFA, while 4 (11.76%) were positive by tissue culture.

Out of 8 women aged from 36 to 45 years , only one woman (12.5%) was positive by DFA only.

There is no significant difference between different age groups as regard results of the three diagnostic methods, but the table showed that, young women (16 to 35 years) had high significant incidence of C. trachomatis than older women.

Prevalence of C. trachomatis infection as regards to the residence (table 8):

Group I (cases): 151 (75.5%) women were from rural area, and 49 (24.5%) women were from urban area.

Out of 151 rural women, 36 (23.84%) were chlamydia positive by Giemsa stain, 43 (28.48%) were positive by DFA, and 50 (33.11%) were positive by tissue culture.

Out of 49 urban women, 7 (14.29%) were chlamydia positive by Giemsa stain, 8 (16.33%) were positive by DFA, and 9 (18.37%) were positive by tissue culture.

Group II (control): 68 women (68%) were from rural area, and 32(32%) were from urban area.

Out of 68 rural women, 6 (8.82%) women were chlamydia positive by Giemsa stain, 9 (13.24%) were positive by DFA, and 11 (16.18%) were positive by tissue culture.

Out of 32 urban women, 2 (6.25%) were chlamydia positive by both Giemsa stain and DFA, while 3 (9.38%) were positive by tissue culture.

There is no significant difference between rural and urban residence as regard results of the three diagnostic methods, but the table showed that, rural women had high significant incidence of C. trachomatis than urban women.

Prevalence of C. trachomatis infection as regard to previous abortion(s) (table 9):

Group I (cases): 130 women (65%) were have no history of previous abortion, 49 (24.5%) were aborted once, and 21 (10.5%) were aborted more than one time.

Out of 130 women, who had no previous history of abortion, 22 (16.92%) were chlamydia positive by Giemsa stain, 26 (20.0%) were positive by DFA, and 29 (22.31%) were positive by tissue culture.

Out of 49 women who aborted once, 14 (28.57%) were chlamydia positive by Giemsa stain, 15 (30.61%) were positive by DFA, and 19 (38.78%) were positive by tissue culture.

Out of 21 women, who aborted more than one time, 7 (33.33%) were chlamydia positive by Giemsa stain, 10 (47.62%) were positive by DFA, and 11 (52.38%) were positive by tissue culture.

Group II (control): 66 women (66%) were have no history of abortion, 23 (23%) were aborted once, and 11 (11%) were aborted than one time.

Out of 66 women, who had no previous history of abortion, 6 (9.09%) were chlamydia positive by Giemsa stain, 7 (10.61%) were positive by DFA, and 8 (12.12%) were positive by tissue culture.

Out of 23 women, who aborted once, 1 (4.35%) was chlamydia positive by Giemsa stain, 2 (8.70%) were positive by DFA, and 4 (17.39%) were positive by tissue culture.

Out of 11 women, who aborted than one time, 1 (9.09%) was chlamydia positive by Giemsa stain, while 2 (18.18%) were positive by both DFA and tissue culture.

There is no significant difference between aborted and non aborted women as regard results of the three diagnostic tests, but the table showed that aborted women had high significant incidence of C. trachomatis than non aborted women.

Prevalence of C. trachomatis infection as regard to the method of contraception (table 10):

Group I (cases): 120 women (60%) were not used any contraceptive method, 21 (10.5%) were using oral contraceptive pills, 3 (1.5%) were tubal

ligated, 48 (24%) were using intrauterine device (IUD), and 8 (4%) were using other methods of contraception.

Out of 120 women, who not used any contraceptive method, 25 (20.83%) were chlamydia positive by Giemsa stain, 32 (26.67%) were positive by DFA, and 37 (30.83%) were positive by tissue culture.

Out of 21 women, using oral contraceptive pills, 10 (47.62%) were chlamdyia positive by Giemsa stain, 11 (52.38%) were positive by DFA, and 14 (66.67%) were positive by tissue culture.

No positive cases were detected in the 3 tubal ligated women.

Out of 24 women, who used IUD; 7 (14.58%) were positive by Giemsa, DFA and tissue culture.

Out of 8 women, who were using other methods of contraception, 1 (12.5%) was chalmydia positive by Giemsa, DFA, and tissue culture.

Group II (control): 70 women (70%) were not used any contraceptive method, 4(4%) were using oral contraceptive pills, 22(22%) were used IUD, and 4 (4%) were used other methods of contraception.

Out of 70 women, who not used any contraceptive method, 4 (5.71%) were chlamydia positive by Giemsa stain, 6 (8.75%) were positive by DFA, and 10 (14.29%) were positive by tissue culture.

Out of 4 women, who used oral contraceptive pills, 2 (50.00%) women were chlamydia positive by Giemsa strain, DFA, and tissue culture.

Out of 22 women, who used IUD, one (4.55%) woman was chlamydia positive by Giemsa, DFA and tissue culture.

Out of 4 women, who used other methods of contraception, 1 (25.0%) woman was chlamydia positive by Giemsa and tissue culture, and 2 (50.0%) women were positive by DFA.

There is no significant difference between using or non using contraceptive method as regard results of the three diagnostic tests, but the table showed that women who used oral contraceptive pills had higher significant incidence of C. trachomatis than other women.

Prevalence of C. trachomatis infection as regard to the week of menstrual cycle at the time of examination (table 11):

Group I (cases): 98 women (49%) were at the 1st week of menstrual cycle, 39 (19.5%) were at the 2nd week, 49 (23.5%) were at the 3rd week, and 16 (8%) were at the 4th week.

Out of 98 women, who were at the 1st week of menstrual cycle, 18 (18.37%) were chlamydia positive by Giemsa stain, 23 (23.47%) were positive by DFA, and 27 (27.55%) were positive by tissue culture.

Out of 39 women, who were at the 2ndweek of menstrual cycle, 9 (23.08%) were chlamydia positive by Giemsa stain, 10 (25.64%) were positive by DFA, and 11 (28.21%) were positive by tissue culture.

Out of 49 women, who were at the 3rd week of menstrual cycle, 14 (28.57%) were chlamydia positive by Giemsa stain, 16 (32.65%) were positive by DFA, and 18 (36.73%) were positive by tissue culture.

Out of 16 women, who were at the 4th week of menstrual cycle, 2 (12.5%) were chlamydia positive by both Giemsa stain and DFA, while 3 (18.75%) were positive by tissue culture.

Group II (control): 62 women (62%) were at the 1st week of menstrual cycle, 13 (13%) were at the 2nd week, 11 (11%) were at the 3rd week and 14 (14%) were at the 4th week.

Out of 62 women, who were at the 1st week of menstrual cycle, 5 (8.06%) were chlamydia positive by Giemsa stain, 7 (11.29%) were positive by DFA, and 8 (12.9%) were positive by tissue culture.

Out of 13 women, who were at the 2nd week of menstrual cycle, 3 (23.08%) were chlamydia positive by both Giemsa stain and DFA, and 4 (30.77%) were positive by tissue culture.

Out of 11 women, who were at the 3rd week of menstrual cycle, only one (9.09%) was chlamydia positive by DFA and tissue culture only.

Only one (7.14%) woman, out of 14 women at the 4th week of menstrual cycle, was chlamydia positive by tissue culture.

There is no significant difference between the weeks of the menstrual cycle as regards results of the three diagnostic tests. But the table showed high significant incidence of C. trachomatis in the 1st, 2nd and 3rd weeks in group I and in the 1st and 2nd weeks in group II.

Prevalence of C. trachomatis infection as regard to the fertility state (Table 12):

Group I (cases): 81 women (40.5%) were 1ry infertile, 39 (19.5%) were 2ndry infertile, and 80 (40.0%) were fertile.

Out of 81 1ry infertile women, 28 (34.57%) were chlamydia positive by Giemsa stain, 30 (37.04%) were positive by DFA, and 33 (40.74%) were positive by tissue culture.

Out of 39 2ndry infertile women, 13 (33.33%) were chlamydia positive by Giemsa stain, 17(43.59%) were positive by DFA, and 23 (58.97%) were positive by tissue culture.

Out of 80 fertile women, 2 (2.5%) were chlamydia positive by Giemsa stain, 4 (5.0%) were positive by DFA, and 3 (3.75%) were positive by tissue culture.

Group II (control): 62 women (62%) women were 1ry infertile, 8 (8%) were 2ndry infertile, and 30 (30%) were fertile.

Out of 62 1ry infertile women, 7 (11.29%) were chlamydia positive by Giemsa stain, 9 (14.52%) were positive by DFA, and 12 (19.35%) were positive by tissue culture.

Out of 8 2ndry infertile women, only one (12.5%) was chlamydia positive by Giemsa stain, DFA and tissue culture.

Out of 30 fertile women, only one (3.33%) was chlamydia positive by DFA and tissue culture only.

There is no significant difference between fertile and infertile women as regard results of the three diagnostic tests. But the table showed that infertile women had high significant incidence of C. trachomatis than fertile women.

Prevalence of C. trachomatis infection as regard to symptoms and signs (table 13):

Out of 200 women of group I, 38 (19%) were suffering from vaginal discharge only, 12 (6%) were suffering from irritation and soreness, and 31 (15.5%) were had cervicitis, 58 (29%) were had cervical erosion, and 61 (30.5%) were had ectopic cervix.

Out of 38 women, who were suffering from vaginal discharge only, 3 (7.89%) were chlamydia positive by Giemsa stain and DFA, and 4 (10.53%) were positive by tissue culture.

Out of 12 women, who suffered from irritation and soreness, 1 (8.33%) was chlamydia positive by Giemsa stain, and 2 (16.67%) were positive by DFA and tissue culture.

Out of 31 women, who had cervicitis, 8 (25.81%) were chlamydia positive by Giemsa stain and DFA and 10 (32.26%) were positive by tissue culture.

Out of 58 women, who had cervical erosion, 13 (22.41%) were chlamydia positive by Giemsa stain, 19 (32,76%) were positive by DFA, and 18 (31.03%) were positive by tissue culture.

Out of 61 women, who had ectopic cervix, 18 (29.51%) were chlamydia positive by Giemsa stain, 19 (31.15%) were positive by DFA, and 25 (40.98%) were positive by tissue culture.

There is no significant difference between symptoms and signs as regard results of the three diagnostic tests, but the table showed high significant incidence of C. trachomatis in women had abnormal cervix (cevicitis, cervical erosion and ectopic cervix).

(Table 1): *Comparison between cases (Group I) and control (Group II) regarding the presence of C. trachomatis by Giemsa stain.*

Giemsa stain	Group (I) (cases)		Group (II) (control)		X^2	P
	no	%	no	%		
chlamydia positive	43	21.5	8	8	8.611	< 0.005
chlamydia negative	157	78.5	92	92		(significant)
Total	200	100	100	100		

- The difference between the two groups is statistically significant.

- Total number of chlamydia positive specimens in both groups 51

(Table 2) : *Comparison between cases (Group I) and control (Group II) regarding the presence of C. trachomatis by direct fluorescent antibody (DFA) staining.*

DFA stain	Group (I) (cases)		Group (II) (control)		X^2	P
	no	%	no	%		
chlamydia positive	51	25.5	11	11	8.549	< 0.005 (significant)
chlamydia negative	149	74.5	89	89		
Total	200	100	100	100		

- The difference between the two groups is statistically significant.

- Total number of chlamydia positive specimens in both groups 62

(Table 3): *Specimens giving positive results by immuno-fluorescent technique grouped according to the number of elementary bodies seen on fluorescence.*

$N^{\underline{o}}$ of elementary bodies in fluorescence smears	Group (I) (cases)		Group (II) (control)		x^2	P
	no	%	no	%		
5 - 20 (a)	10	19.6	3	27.275		
21 - 40 (b)	21	41.2	5	45.450		< 0.005
41 - 80 (c)	13	25.5	3	27.275	1.81	(not significant)
more than 80 (d)	7	13.7	0	0		
Total	51	100%	11	100%		

	P value	P value	
Z test between a & b	3.99< 0.01 sig	3.18< 0.01 sig	
Z test between a & c	1.02> 0.01 not sig	1 > 0.01 not sig	
Z test between a & d	1.12> 0.01 not sig	————	
Z test between b & c	3.12< 0.01 sig	3.18 < 0.01 sig	
Z test between b & d	4.24< 0.01 sig	————	
Z test between c & d	1.23> 0.01 not sig	————	

No significant difference between the number of elementary bodies as regard to positive results. But number (b) = (21-40) of elementary bodies has a higher significant incidence of c. trachomatis then other numbers of elementary bodies (a, c and d)

(Table 4) : *Comparison between cases (Group I) and control (Group II) regarding the presence of c. trachomatis by tissue culture stained with iodine.*

Tissue culture stained with iodine	Group (I) (cases)		Group (II) (control)		x^2	P
	no	%	no	%		
chlamydia positive	59	29.5	14	14	8.699	< 0.005
chlamydia negative	141	70.5	86	86		(significant)
Total	200	100	100	100		

- The difference between the two groups is statistically significant.
- Total number of chlamydia positive specimens in both groups 73

(Table 5) : *Comparison between tissue culture and Giemsa stain regarding the diagnosis of chlamydial infection.*

Test		Tissue culture		Total number of tested samples
		+ ve	- ve	
Giemsa	+ ve	51	0	51
stain	- ve	22	227	249
Total		73	227	300

- Sensitivity = 69.86%

- Specificity = 100%

- + ve PV. = 100%

- - ve PV. = 91.16%

(Table 6) : *Comparison between tissue culture and DFA stain regarding the diagnosis of chlamydial infection.*

Test		Tissue culture		Total number of tested samples
		+ ve	- ve	
DFA	+ ve	59	3	62
	- ve	14	224	238
Total		73	227	300

- Sensitivity = 80.82%
- Specificity = 98.67%
- + ve PV. = 92.16%
- - ve PV. = 94.11%

(Table 7): *Prevalence of c. trachomatis infection in cases (Group I) and control (Group II) as regards to age.*

age	Group (I)									Group (II)								
	no	%	Giemsa		DFA		culture				no	%	Giemsa		DFA		culture	
			no	%	no	%	no	%	X^2	P			no	%	no	%	no	%	X^2	P
16-25 y. (a)	104	52	26	25.0	31	29.81	38	36.54	1.09	> 0.05 not significant	58	58	6	10.34	8	13.79	10	17.24	2.28	> 0.05 not significant
26-35 y. (b)	63	31.5	16	25.4	17	26.98	19	30.16			34	34	2	5.88	2	5.88	4	11.76		
36-54 y. (c)	33	16.5	1	3.03	3	9.09	2	6.06			8	8	0	0.00	1	12.5	0	0.00		
Total	200	100	43	21.5	51	25.5	59	29.5			100	100	8	8	11	11	14	14		

P value (Group I)
Z test between a&b = 0.84 > 0.01 not significant
Z test between a&c = 3.11 < 0.01 significant
Z test between b&c = 2.99 < 0.01 significant

P value (Group II)
0.71 > 0.01 not significant.
4.12 < 0.01 significant.
.98 < 0.01 significant.

No significant difference between different age group as regard results of the three diagnostic methods. But young women (a&b) had high significant incidence of c. trachomatis than old women (c).

(Table 8) : *Prevalence of c. trachomatis infection in cases (Group I) and control (Group II) as regards to the residence.*

Residence			Group (I)								Group (II)							
			Giemsa		DFA		culture		X^2	P			Giemsa		DFA		culture		X^2	P
	no	%	no	%	no	%	no	%			no	%	no	%	no	%	no	%		
Rural	151	75.5	36	23.84	43	28.48	50	33.11	0.02	> 0.05 not significant	68	68	6	8.82	9	13.24	11	16.18	0.13	> 0.05 not significant
Urban	49	24.5	7	14.29	8	16.33	9	18.37			32	32	2	6.25	2	6.25	3	9.38		
Total	200	100	43		51		59				100	100	8		11		14			

Z test between Rural & Urban   P 4.45 < 0.01 significant

No significant difference between Rural and Urban residence as regard results of the three diagnostic methods. But rural women had high significant incidence of c. trachomatis than urban women.

(Table 9): *Prevalence of c. trachomatis infection in cases (Group I) and control (Group II) as regards to previous abortion(s).*

Previous abortion	Group (I)										Group (II)									
	no	%	Giemsa no	%	DFA no	%	culture no	%	X²	P	no	%	Giemsa no	%	DFA no	%	culture no	%	X²	P
non (a)	130	65	22	16.92	26	20.00	29	22.31	0.289	> 0.05 not significant	66	66	6	9.09	7	10.61	8	12.12	1.057	> 0.05 not significant
one time (b)	49	245	14	28.57	15	30.61	19	38.78			23	23	1	4.35	2	8.70	4	17.39		
more than one time (c)	21	10.5	7	33.33	10	47.62	11	52.38			11	11	1	9.09	2	18.18	2	18.18		
Total	200	100	43		51		59				100	100	8		11		14			
P value																				
Z test between a&b	3.11 > 0.01 significant										2.42 > 0.01 not significant.									
Z test between a&c	2.87 < 0.01 significant										3.72 < 0.01 significant.									
Z test between b&c	0.84 < 0.01 not significant										0.99 < 0.01 non significant									

No significant difference between aborted and non aborted women as regard results of the three tests. But aborted women (b&c) had high significant incidence of c. trachomatis than non aborted women (a).

(Table 10): Prevalence of C. trachomatis infection in cases (Group I) and control (Group II) as regards to the method of contraception.

Method of contraception	Group (I)										Group (II)									
	no	%	Giemsa no	%	DFA no	%	culture stained with iodine no	%	X²	P	no	%	Giemsa no	%	DFA no	%	culture no	%	X²	P
non (a)	120	60	25	20.83	32	26.67	37	30.83			70	70	4	5.71	6	8.57	10	14.29		
oral contraception (b)	21	10.5	10	47.62	11	52.38	14	66.67			4	4	2	50.00	2	50.0	2	50.00		
tubal ligation (c)	3	1.5	0	0.00	0	0.00	0	0.00	0.589	> 0.05 not significant	0	0	0	0.0	0	0.0	0	0.00	1.58	> 0.05 not significant
IUD (d)	48	24	7	14.58	7	14.58	7	14.58			22	22	1	4.55	1	4.55	1	4.55		
other (e)	8	4	1	12.5	1	12.5	1	12.5			4	4	1	25.0	2	50.00	1	25.00		
Total	200	200	43		51		59				100	100	8		11		14			

IUD (intrauterine device)

Z test between b & a, c, d and e   < 0.01 significant

No significant difference between using or non using contraceptive method as regard results of the three diagnostic tests. But women using oral contraception (b) had high significant incidence of c. trachomatis than other women (a, c, d and c).

(Table 11) : Prevalence of c. trachomatis infection in cases (Group I) and control (Group II) as regards to the week of menstrual cycle.

Menstruation cycle/week	Group (I)										Group (II)									
	no	%	Giemsa		DFA		culture stained with iodine		X²	P	no	%	Giemsa		DFA		culture		X²	P
			no	%	no	%	no	%					no	%	no	%	no	%		
1st week (a)	98	49	18	18.37	23	23.47	27	27.55	0.274	> 0.05 not significant	62	62	5	8.06	7	11.29	8	12.90	2.269	> 0.05 not significant
2nd week (b)	39	19.5	9	23.08	10	25.64	11	20.21			13	13	3	23.08	3	23.08	4	30.77		
3rd week (c)	49	23.5	14	28.57	18	32.65	18	36.73			11	11	0	0.00	1	9.09	1	9.09		
4th week (d)	16	8	2	12.5	2	12.50	3	18.75			14	14	0	0.00	0	0.00	1	7.14		
Total	200	100	43		51		59				100	100	8		11		14			

P

Group (I)	Group (II)
Z test between a&b 1.83 > 0.01 not significant	1.34 > 0.01 not significant.
Z test between a&c 1.62 < 0.01 not significant	2.68 < 0.01 significant.
Z test between a&d 2.01 < 0.01 significant	3.43 < 0.01 significant.
Z test between b&c 1.06 < 0.01 not significant	4.55 < 0.01 significant.
Z test between b&d 2.64 < 0.01 significant	4.63 < 0.01 significant.
Z test between d&c 3.93 < 0.01 significant	0.43 < 0.01 not significant.

No significant difference between the weeks of the menstrual cycle as regard results of the three diagnostic tests. But high significant incidences of c. trachomatis are detected in 1st, 2nd and 3rd week in group I and in 1st and 2nd week in group II.

(Table 12): Prevalence of c. trachomatis infection in cases (Group I) and control (Group II) as regards to fertility state.

Fertility state	Group (I) (cases)										Group (II) (control)									
	no	%	Giemsa no	Giemsa %	DFA no	DFA %	culture no	culture %	X²	P	no	%	Giemsa no	Giemsa %	DFA no	DFA %	culture no	culture %	X²	P
1ry infertile (a)	81	40.5	28	34.57	30	37.04	33	40.74	1.45	> 0.05	82	62	7	11.29	9	14.52	12	19.35	0.796	> 0.05
2ndry infertile (b)	39	19.5	13	33.33	17	43.59	23	58.97		not	8	8	1	15	1	12.5	1	12.5		not
Fertile (c)	80	40.0	2	2.50	4	5.00	3	3.75		significant	30	30	0	0.00	1	3.33	1	3.33		significant
Total	200	100	43		51		59				100	100	8		11		14			
P value																				
Z test between a&b 0.73 > 0.01 not significant											0.82 > 0.01 not significant.									
Z test between a&c 3.85 < 0.01 significant											4.63 < 0.01 significant.									
Z test between b&c 4.96 < 0.01 significant											3.95 < 0.01 significant.									

No significant difference between fertile and infertile women as regard results of the three diagnostic tests. But infertile women (a & b) had high significant incidence of C. trachomatis than fertile women (c) in both group I and group II.

(Table 13) : *Prevalence of C. trachomatis infection as regards to symptoms and signs of cases (Group I).*

Symptoms and/or signs	no	%	Group I (cases)						X²	P
			Giemsa		DFA		culture			
			no	%	no	%	no	%		
(a) Discharge only	38	19	3	7.89	3	7.89	4	10.53	1.049	>0.05 not significant
(b) Irritation and soreness	12	6	1	8.33	2	16.67	2	16.67		
(c) cervicitis	31	15.5	8	25.81	8	25.81	10	32.26		
(d) cervical erosion	58	29	13	22.41	19	32.76	18	31.03		
(e) ectopic cervix	61	30.5	18	29.51	19	31.15	25	40.98		
Total	200		43		51		59			

P value		
Z test between a & b	1.78	> 0.01
Z test between a & c	2.91	< 0.01
Z test between a & d	2.67	< 0.01
Z test between a & e	2.96	< 0.01
Z test between b & c	2.83	< 0.01
Z test between b & d	2.41	< 0.01
Z test between b & e	2.89	< 0.01
Z test between c & d	1.43	> 0.01
Z test between c & e	0.98	> 0.01
Z test between d & e	1.76	> 0.01

> 0.01 = not significant   < 0.01 = significant

> 0.01 = not significant

No significant difference between symptoms and signs as regard results of the three diagnostic tests. But higher significant incidence of C. trachomatis are detected in women having abnormal cervix (c), (d) and (e).

Figure 1 : Shows +ve chlamydia in endocervical smears
stained by Giemsa (100 x)
a. infected cells   b. normal cells

Figure 2 : Shows +ve chlamydia in endocervical smears

stained by Giemsa (1000 x)

a. initial bod   b. nucleus of the cells   c. cytoplasm

Figure 3 : Shows +ve chlamydia in endocervical smears
stained with DFA .

Figure 4 : Shows -ve chlamydia in endocervical
smears stained with DFA .
The yellow spots are artifacts

figure 5: Cultured BGM cells stained with Iodine stain.

Note the red brown to dark brown intracytoplasmic

inclusions of C. trachomatis in pale yellow BGM cells

a. normal BGM cells   b. infected BGM cells