RESULTS

In this work ninety two couples with history of repeated consecutive spontaneous abortions and fifty controls of normal couples with no history of previous abortion formed the material of this study.

Results of this present study are illustrated in tables from No. 1 to No. 24, and figures from Fig. 1 to Fig. 3.

I- Results of HLA- B12 and - B 17.

(1) The incidence of HLA- B12 and- B17 among cases and control is tabulated in Table (1).

A- Results of HLA- B12:

Thirteen women of study group (14.13%) and 14 (15.22%) of their husbands were HLA- B12 positive compared to 7 (14%) women and 6 (12%) of their husbands among control group. The difference shown is not significant. (P> 0.05).

Sharing of HLA- B12 among study group was 2 cases (2.17%) and one case among control group 2%. The difference is not significant (P> 0.05).

B- Results of HLA- B17:

Six women of study group (6.52%) and 5 of their husbands (5.43%) were HLA- B17 positive compared to 3 women of study group (6%) and 2 of

their husbands (4%) among control group. The difference is not significant (P> 0.05).

Sharing of HLA- B 17 among study group was 2 cases (2.17%) and one case (2%) among control group. The difference is not significant (P> 0.05).

(2) Table (2) tabulates the incidence of HLA - B12 and- B17 according to the type of abortion:

Eight women out of 64 with primary abortion (12.5%) and 8 of their husbands were HLA- B 12 positive and one case showed sharing (1.56%). In secondary aborters 5 women (17.85%) out of 28 and 6 of their husbands (21. 42%) and one case only had sharing (3.57%). The differences between primary and secondary aborters are not significant. (P> 0.05).

As regard to HLA- B17, 4 women of primary aborters (6.25%) and three of their husbands (4.69%) were positive. Two cases (3.13%) showed sharing. In secondary aborters, two women (7.14%) and 2 of their husbands (7.14%) were positive for HLA. B17. No cases showed sharing. The differences shown between primary and secondary aborters are not significant. (P> 0.05).

(3) Table (3) shows the incidence of HLA- B12 and HLA- B17 according to the number of abortions.

A) Cases of abortions less than 5 times:

i- Incidence of HLA- B12:

Nine women (15.79%) out of 57 and nine of their husbands (15.79%) were HLA- B12 positive. Two cases had sharing (3.5%)

ii- Incidence of HLA- B17:

Four women (7.01%) and three of their husbands (5.26%) were HLA-B 17 positive. One case had sharing. (1.75%).

B- Cases of abortion more than five times:

i. Incidence of HLA- B12:

Four women out of 35 (11. 43%) and 5 husbands (14. 28%) were HLA-B12 positive. No couples had sharing.

ii- Incidence of HLA- B 17:

Two women (5.71%) and 2 husbands (5.71%) were HLA- B17 positive. One case had sharing (2.86%).

The differences between women with abortions less than five times and those more than five times are not significant. (P> 0.05).

(4) Results of HLA- B12 and HLA- B17 according to different age groups. (Table 4a)

i- In first group aged from 19-25 years:

a) *Incidence of HLA- B12*

Six wives out of 42 (14.29%) and 8 husbands (19.04%) were HLA- B12 positive. One case showed sharing (2.38%).

b) *Incidence of HLA- B17*

Four women out of 42 (9.52%) and 3 husbands (7.14%) were HLA- B17 positive. One case had sharing (2.38%).

ii- In the second group aged from 26 to 30 years :-

a) *Incidence of HLA-B12 :-*

Five women (18.51%) out of 27 and 4 husbands (14.81%) were HLA-B12 positive. One case had sharing (3.7%).

b) *Incidence of HLA- B17:*

Two wives (7.4%) and two husbands (7.4%) were HLA- B17 positive. One case had sharing (3.7%).

iii) In the third group aged from 31 to 35 years:

a) Incidence of HLA- B12.

Two wives out of 23 (8.7%) and 2 husbands (8.7%) were positive. No couples had sharing.

b) Incidence of HLA- B17:

All cases (wives and husbands) were negative. The differences in results between all different age groups are not significant. (P> 0.05).

Table (4b) shows Incidence of HLA- B12 according to age groups among case and control groups: No significant differences were reported between different groups (P> 0.05).

Table (4c) shows incidence of HLA- B17 according to age groups among case and control groups: No significant differences were reported between different groups (P> 0.05).

II. Results of C. M. V. antibodies:

A) Incidence of C. M. V. IgG and IgM antibodies among cases and control (Table 5).

i) Incidence of C. M. V. IgG antibodies.

Eighty six cases out of 92 (93.5%) were positive while all the control group (100%) were positive. This difference is significant. (P< 0.01).

ii) Incidence of C. M. V. IgM antibodies

Eight cases out of 92 (8.7%) were positive and 2 out of 50 (4%) women in the control group were positive. The difference is not significant (P> 0.05).

Table (6) shows the absorbance levels of IgG among study and control groups. At low level of absorbance of C. M. V. IgG antibodies, the difference between cases and control groups was not significant (P> 0.05). At a high level of absorbance (++++) 14 cases (15.22%) out of 92 and 21 out of 50 (42%) of control group gave high absorbance. This difference is significant (P< 0.01).

Table (7) shows the absorbance level of C. M. V. IgG antibodies in positive C. M. V. IgM antibodies in cases and control. The difference is not significant (P> 0.05).

B- Incidence of C. M. V. IgG and IgM antibodies according to type of abortion (Table 8).

i) IgG antibodies :-

a) *Women with primary abortions:*

Sixty two women out of 64 were positive (96. 84%).

b) *Women with secondary abortions:*

Twenty four women out of 28 (85. 71%) were positive.

The difference between primary and secondary aborter women is significant (P< 0.05).

ii) C. M. V. IgM antibodies:

a) *Women with primary abortions:*

Five women out of 64 (7.81%) were positive.

b) *Women with secondary abortions:*

Three women out of 28 (10.71%) were positive. This difference is not significant. (P> 0.05).

C) Incidence of C. M. V. IgG and IgM antibodies according to number of abortions (Table 9).

i) Incidence of C. M. V. IgG antibodies:

a) *In women with abortions less than 5 times:*

Fifty four women out of 57 were positive (94.74%).

b) *In women with abortions more than 5 times.*

Thirty two women out of 35 (91.43%) were positive. The difference between two groups is not significant. (P> 0.05)

ii) Incidence of C. M. V. IgM antibodies:

a) *In women with abortions less than 5 times:*

Three women out of 57 (5.26%) were positive.

b) In women with abortions more than 5 times:

Five women out of 35 (14.29%) were positive. The difference between two groups is not significant. (P> 0.05).

D) Incidence of C. M. V. IgG and IgM antibodies according to different age groups (Table 10a).

i) In the first group aged from 19 to 25 years:

a) Incidence of C. M. V. IgG antibodies:

Thirty nine women out of 42 (92. 86%) were positive.

b) Incidence of C. M. V. IgM antibodies:

Four women out of 42 (9.52%) were positive.

ii) In the second group aged from 26 to 30 years:

a) Incidence of C. M. V. IgG antibodies:

Twenty five women out of 27 (92. 59%) were positive.

b) Incidence of C. M. V. IgM antibodies:

Three women out of 27 (11.11%) were positive.

iii) In the third group aged from 31 to 35 years :

a) *Incidence of C.M.V. IgG antibodies :*

Twenty two women out of 23 (95.65%) were positive

b) *Incidence of C.M.V. IgM antibodies:*

One case out of 23 (4.35%) was positive.

The differences in the results of both C. M. V. IgG and IgM antibodies between the different age groups are not significant (P> 0.05).

Table (10 b) shows incidence of C. M. V. IgG antibodies among case and control groups according to age groups :- No significant differnces were reported between different groups (P> 0.05).

Table (10c) shows incidence of C.M.V. IgM antibodies according to age groups among cases and controls. No significant differences were reported between different groups (P> 0.05).

E) Incidence of C. M.V. IgG and IgM antibodies according to socioeconomic level. (Table 11).

i) Low socioeconomic level group:

a) *Incidence of C. M. V. IgG antibodies:*

Forty nine women out of 51 (96.08%) were positive compared to control group as all of them were positive (100%). This difference is not significant (P> 0.05).

b) Incidence of IgM antibodies:

Seven women out of 51(13.73%) were positive compared to 2 positive women out of 30 control group (6.67%). The difference is not significant. (P> 0.05).

ii) High socioeconomic level group:

a) Incidence of C. M. V. IgG antibodies:

Thirty seven women out of 41 were positive (90.24%) compared to all control group as they were positive (100%).

This difference is significant (P< 0.001)

b) Incidence of C. M. V. IgM antibodies:

One women out of 41 was positive (2.44%). All control group were negative. This difference is not significant. (P> 0.05).

No significant difference was reported between low and high socioeconomic groups as regard to C. M. V. IgG antibodies (P> 0.05). But the difference is significant as regard to C. M. V. IgM (P< 0.05).

F) Incidence of C. M. V. IgG and IgM antibodies according to residence (Table 12).

i) Incidence of C. M. V. IgG antibodies:

No significant difference (P> 0.05) between positive cases in rural group (94.34%) and urban group (92.31%) was reported. Also no significant difference reported between rural and urban control groups (P> 0.05).

ii) Incidence of C. M. V. IgM antibodies:

No significant difference was reported between positive cases in urban and rural groups (P> 0.05). Also between urban and rural control group. The difference is significant (P< 0.001) between positive urban cases (5.13%) and control group (0%).

G) Absorbance levels of C. M. V. IgG and IgM antibodies (Table 13).

The absorbance level of C. M. V. IgG antibodies was higher in control group than in cases. The difference is significant. (P< 0.001).

As regard to C. M. V. IgM antibodies, the difference is not significant (P> 0.05).

H) Cytomegalovirus IgG versus C. M. V. IgM antibodies absorbance levels (Fig I)

The correlation between them is significant. (P< 0.05).

III Results of ANA

1- Incidence of ANA among case and control groups. (Table 14).

Twelve cases out of 92 (13.04%) were positive, compared to 2 (4%) out of 50 in the control group. The difference is significant (P< 0.05).

2- Incidence of ANA according to the type of abortion. (Table 15):

Nine out of 64 of primary aborters (14.06%) were positive compared to 3 (10.71%) out of 28 of secondary aborters. The difference is not significant (P> 0.05).

3- Incidence of ANA according to number of abortions (Table 16).

In patients aborted less than 5 times, 7 were positive (12.28%) out of 57 compared to 5 (14. 29%) out of 35 patients aborted more than 5 times. The difference is not significant (P> 0.05).

4) Incidence of ANA according to the different age groups (Table 17a).

a) In the first group aged from 19 to 25 years 6 out of 42 were positive (14.29%).

b) In the second group aged from 26 to 30 years 3 out of 27 were positive (11.11%).

c) In the third group aged from 31 to 35 years 3 out of 23 (13.04%) were positive.

The difference between the different age groups is not significant (P> 0.05).

Table (17b) shows incidence of ANA according to age groups among cases and control. No significant differences were reported between different groups. (P> 0.05).

IV Results of Total IgM:

Table (18) shows incidence of total IgM antibodies according to level of total IgM concentration. They were divided according to reference sera as follow: Low concentration immunoglobulin = 31 mg %, medium concentration immunoglobulin = 133 mg%, and high concentration immunoglobulin= 308 mg%. So results less than 31 mg% = +. Results from 32 to 133 mg% = ++,. Results from 134 to 308 mg%= +++ Results more than 308 mg%= ++++.

The difference between cases and control group in all these groups were not significant.

Table (19) shows incidence of total IgM antibodies level according to type of abortion. The difference was not significant in all levels of antibody concentration between the two groups.

Table (20) shows incidence of total IgM antibodies according to the number of abortion. No significant difference between the two groups in all levels of IgM antibody concentrations was found.

Table (21a) shows incidence of total IgM antibodies according to age group. The difference was not significant except between the third and second group where the difference was significant at medium concentration level of immunoglobulin M.

Table (21b) shows incidence of total IgM at high concentration serum level (+4) according to age groups among cases and contols. No significant differnces were reported between different groups (P> 0.05).

Table (22) shows the correlation between concentration levels of IgM antibody in patients and control group. The level was higher in patients than that in control group, but the difference was not significant (P> 0.05).

Fig. (2) and **(3)** show the relationships between the level of total IgM antibodies and the level of absorbance of C. M. V. IgM and C. M. V. IgG antibodies respectively. This relation was significant in case of C. M. V. IgM, and not significant in case of C. M. V. IgG antibodies.

Tables (23) and **(24)** show the incidence of positive cases for C. M. V. IgG (high absorbance level), total IgM (high level), and ANA in women positive for HLA- B12 and HL- B17 respectively among cases and control. The difference between them was not significant.

Table (1):

Incidence of HLA- B 12 and HLA- B 17 among cases and control.

Item	No. Examined	HLA - B 12							HLA - B 17							
		Wife	%	No.	Husbands	%	Sharing	%	No.	Wife	%	No.	Husbands	%	Sharing	%
Cases	92	13	14.13	92	14	15.22	2	2.17	92	6	6.52	92	5	5.43	2	2.17
Control	50	7	14	50	6	12	1	2	50	3	6	50	2	4	1	2
Z test		0.021		0.526					0.22			0.377				
P value		N. S.		N. S.					N. S.			N. S.				

N. B.: N. S. : Non significant

* No significant differences were reported between study and control groups as regard to HLA- B12, HLA- B 17, and sharing

Table (2):

Incidence of HLA- B 12 and HLA- B 17 according to type of abortion.

Item	No. Examined	HLA - B 12							HLA - B 17							
		Wife	%	No.	Husbands	%	Sharing	%	No.	Wife	%	No.	Husbands	%	Sharing	%
Primary aborters	64	8	12.5	64	8	12.5	1	1.56	64	4	6.25	64	3	4.69	2	3.13
Secondary aborters	28	5	17.85	28	6	21.42	1	3.57	28	2	7.14	28	2	7.14	-	-
Total No.	92	13	14.13	92	14	15.21	2	2.17	92	6	6.52	92	5	5.43	2	2.17
Z test		0.68		1.097					0.48			0.946				
P value		N. S.		N. S.					N. S.			N. S.				

* No significant differences were reported as regard to type of abortion.

Table (3):

Incidence of HLA- B 12 and HLA- B 17 according to the frequency of abortions.

Item	No. Examined	HLA - B 12							HLA - B 17							
		Wife	%	No.	Husbands	%	Sharing	%	No.	Wife	%	No.	Husbands	%	Sharing	%
Less than 5 times	57	9	15.79	57	9	15.79	2	3.5	57	4	7.01	57	3	5.26	1	1.75
More than 5 times	35	4	11.43	35	5	14.28	-	-	35	2	5.71	35	2	5.71	1	2.86
Total No.	92	13	14.13	92	14	15.22	2	2.17	92	6	6.52	92	5	5.43	2	2.05
Z test		0.58			0.195		1.12		0.24			0.01			0.35	
P value		N. S.			N. S.		N. S.		N. S.			N. S.			N. S.	

* No significant difference according to the frequency of abortions was reported.

Table (4a):

Incidence of HLA- B 12 and HLA- B 17 according to age group.

Item	No. Examined	HLA - B 12							HLA - B 17							
		Wife	%	No.	Husbands	%	Sharing	%	No.	Wife	%	No.	Husbands	%	Sharing	%
From 19-25 y	42	6	14.29	42	8	19.04	1	2.38	42	4	9.52	42	3	7.14	1	2.38
From 26-30 y	27	5	18.51	27	4	14.81	1	3.70	27	2	7.41	27	2	7.41	1	3.70
From 31-35 y	23	2	8.70	23	2	8.70	-	-	23	-	-	23	-	-	-	-
Total No.	92	13	14.13	92	14	15.22	2	2.17	92	6	6.52	92	5	5.43	2	2.17
Z_1		0.47 N. S.			0.32 N. S.		0.32 N. S.			0.30 N. S.			0.04 N. S.			
Z_2		0.66 N. S.			1.11 N. S.		0.75 N. S.			1.53 N. S.			1.31 N. S.			
Z_3		0.99 N. S.			0.66 N. S.		0.93 N. S.			1.33 N. S.			1.33 N. S.			

where: Z_1 : Group 1 versus groups 2 Z_2 : Group 1 versus groups 3

Z_3 : Group 2 versus groups 3

* No significant differences were reported as regard to age groups

Table (4b):

Incidence of HLA- B 12 according to age groups among cases and control.

Item	No. Ex.	Cases						Control						
		Wife	%	Husbands	%	Sharing	%	No. Ex.	Wife	%	Husbands	%	Sharing	%
19-25 y	42	6	14.29	8	19.04	1	2.38	22	4	18.18	4	18.18	1	2.30
26-31 y	27	5	28.51	4	14.81	1	3.70	15	2	13.33	1	6.67	-	-
31-35 y	23	2	8.70	2	8.70	-	-	13	1	7.69	1	7.69	-	-
Total No.	92	13	14.13	14	15.22	2	2.17	50	7	14	6	12	1	2

Z_1 : Group I cases versus groups I control = 0.396 N. S.

Z_2 : Group II cases versus groups II control = 1.23 N. S.

Z_3 : Group III cases versus groups III control =0.107 N. S.

* No significant differences among different groups were reported.

Table (4c):

Incidence of HLA- B 17 according to age groups among cases and control.

Item	No. Ex.	Cases						Control						
		Wife	%	Husbands	%	Sharing	%	No. Ex.	Wife	%	Husbands	%	Sharing	%
19-257 years	42	4	9.52	3	7.41	1	2.38	22	2	9.09	2	9.09	1	2
26-30 years	27	2	7.41	2	7.41	1	3.70	15	1	6.67	-	-	-	-
31-35 years	23	-	-	-	-	-	-	13	-		-	-	-	-
Total	92	6	6.52	5	5.43	2	2.17	50	3	6.	2	4	1	2

Z_1 : Group I cases versus groups I control = 0.056 N. S.

Z_2 : Group II cases versus groups II control =0.090 N. S.

Z_3 : Group III cases versus groups III control =--- N. S.

* No significant differences among different groups were reported.

Table (5):
Incidence of C.M.V. IgG and IgM antibodies among cases and control.

Item	No. Examined	C. M. V. IgG antibodies				C. M. V. IgM antibodies			
		Positive	%	Negative	%	Positive	%	Negative	%
Cases	92	86	93.5	6	6.5	8	8.7	84	91.3
Control	50	50	100.0	-	-	2	4	48	96.0
K^2		7.641				1.091			
P value		< 0.001				N. S.			

* Cytomegalovirus IgG antibodies was significantly higher in control group than study group.

Table (6):

Incidence of positive cases for IgG antibodies according to degree of absorbance among cases & control

Item	No. Examined	Negative	+	%	++	%	+++	%	+ 4	%
Cases	92	6	13	14.13	37	40.22	22	23.91	14	15.22
Control	50	-	3	6	15	30	11	22	21	42
Z test		1.85			1.21		0.26		3.54	
P value		N. S.			N. S.		N. S.		< 0.01	

* Devided according to absorbance of caliberators.

(1) + Absorbance at 0.62 - 190
(2) ++ Absorbance at 0.191 - 0.706
(3) +++ Absorbance at 0.707 - 1.175
(4) +++ Absorbance at > 1.176

* At higher level of absorbance (++++) the response of cases were significantly less than the response of control

Table (7):

ELISA serum C. M. V. IgG in IgM seropositive cases.

Item	C. M. V. IgM +ve cases	C.M.V. IgG absorbance level							
	No.	+	%	++	%	+++	%	++++	%
Cases	8	-	-	1	12.5	2	25	5	62.5
Control	2	-	-	-	-	-	-	2	100
Z		0		0.53		0.97		1.035	
P		N. S.		N. S.		N. S.		N.S.	

* The absorbance level of C. M. V. IgG antibodies were higher in positive C. M. V. IgM antibodies.

Table (8): Incidence of C.M.V. IgG and IgM antibodies according to type of abortion.

Item	No. Examined	C. M. V. IgG antibodies				C. M. V. IgM antibodies			
		Positive	%	Negative	%	Positive	%	Negative	%
Primary aborters	64	62	96.87	2	3.13	5	7.81	59	92.19
Secondary aborters	28	24	85.71	4	14.29	3	10.71	25	89.24
Total number	92	86	93.48	6	6.52	8	8.70	84	91.30
Z test		1.995				0.46			
P value		< 0.05				N. S.			

* C. M. V. IgG antibodies were significantly higher among primary aborters.

Table (9):

Incidence of C.M.V. IgG and IgM antibodies according to number of abortions.

Item	No. Examined	C. M. V. IgG antibodies				C. M. V. IgM antibodies			
		Positive	%	Negative	%	Positive	%	Negative	%
Less than 5 times	57	54	94.74	3	5.26	3	5.26	54	94.74
More than 5 times	35	32	91.43	3	8.57	5	14.29	30	85.71
Total number	92	86	93.48	6	6.52	8	8.70	84	91.30
K^2		0.389				2.223			
P		N. S.				N. S.			

* No significant differences were reported according to nomber of abortions.

Table (10 a):

Incidence of C..V. IgG and IgM antibodies according to age groups.

Item	No. Examined	C. M. V. IgG antibodies				C. M. V. IgM antibodies			
		Positive	%	Negative	%	Positive	%	Negative	%
From 19-25 y	42	39	92.86	3	7.14	4	9.52	38	90.48
From 26-30y	27	25	92.59	2	7.41	3	11.11	24	88.89
From 31-35y	23	22	95.65	1	4.35	1	4.35	22	95.65
Total No.	92	86	93.48	6	6.52	8	8.70	84	91.30
Z_1		0.041 N. S.				0.21 N. S.			
Z_2		0.448 N. S.				0.75 N. S.			
Z_3		0.45 N. S.				0.879 N. S.			

* No significant differences were reported as regard to age groups

Table (10 b):

Incidence of C..V. IgG antibodies according to age groups among cases and control.

Item	No. Ex.	Cases					Control			
		Positive	%	Negative	%	No. Ex.	Positive	%	Negative	%
19-25 y	42	39	92.86	3	7.14	22	22	100	-	-
26-30 y	27	25	92.59	2	7.41	15	15	100	-	-
31-35 y	23	22	95.65	1	4.35	13	13	100	-	-
Total No.	92	86	93.48	6	6.52	50	50	100		

Z_1 : Group I cases versus groups I control = 1.80 N. S.

Z_2 : Group II cases versus groups II control = 1.47 N. S.

Z_3 : Group III cases versus groups III control = 1.02 N. S.

* No significant differences were reported between different groups

Table (10 c):

Incidence of C..V. IgM antibodies according to age groups among cases and control.

Item	No. Ex.	Cases					Control			
		Positive	%	Negative	%	No. Ex.	Positive	%	Negative	%
19-25 years	42	4	9.52	38	90.48	22	2	9.09	20	90.91
26-30 years	27	3	11.11	24	88.89	15	-	-	15	100
31-35 years	23	1	4.35	22	95.65	13	-	-	13	100
Total	92	8	8.70	84	91.30	50	2	4	48	96

Z_1 : Group I cases versus groups I control = 0.056 N. S.

Z_2 : Group II cases versus groups II control = 1.84 N. S.

Z_3 : Group III cases versus groups III control = 1.00 N. S.

* No significant differences were reported between different groups

Table (11):

Incidence of C.M.V. IgG and IgM antibodies according to socioeconomic level.

Item	C.M.V. IgG antibodies										C. M. V. IgM antibodies									
	Cases					Control					Cases					Control				
	No. Ex.	Posit.	%	Neg.	%	No. Ex.	Posit.	%	Neg.	%	No. Ex.	Posit.	%	Neg.	%	No. Ex.	Posit.	%	Neg.	%
Low S. E.	51	49	96.08	2	3.92	30	30	100	0	0	51	7	13.73	44	86.27	30	2	6.67	28	93.33
High S. E.	41	37	90.24	4	9.76	20	20	100	0	0	41	1	2.44	40	97.56	20	0	0	20	100
Total No.	92	86	93.48	6	6.52	50	50	100	0	0	92	8	8.7	84	91.3	50	2	4	48	96
Z_1	1.087 N. S.										2.098 < 0.05									
Z_2	1.446 N. S.										1.064 N. S.									
Z_3	7.45 < 0.001										1.012 N. S.									
Z_4	0 N. S.										6.51 < 0.001									

where:

Z_1 : Positive cases in high and low S. E.

Z_2 : Positive cases and control in low S. E.

Z_3 : Positive cases in high S. E. versus + ve control in high S. E.

Z_4 : Positive cases in low & high S. E. in control.

* C. M. V. IgG. In high S. E.. The cases were significantly higher than control.

* C. M. V. IgM.positive cases were significantly higher in low S. E. than high S. E. In control, low S. E. higher than high S. E.

Table (12):

Incidence of C.M.V. IgG and IgM antibodies according to residence.

Item	C.M.V. IgG antibodies										C. M. V. IgM antibodies									
	Cases					Control					Cases					Control				
	No. Ex.	Posit.	%	Neg.	%	No. Ex.	Posit.	%	Neg.	%	No. Ex.	Posit.	%	Neg.	%	No. Ex.	Posit.	%	Neg.	%
- Rural	53	50	94.34	3	5.66	33	33	100	-	-	53	6	11.32	47	88.68	33	2	6.06	31	93.94
- Urban	39	36	92.3	3	7.69	17	17	100	-	-	39	2	5.13	37	94.87	17	-	0	17	100
Total No.	92	86	93.48	6	6.52	50	50	100	-	-	92	8	8.70	84	91.30	50	2	4	48	96
Z_1	0.381				N. S.						1.042				N. S.					
Z_2	1.79				N. S.						0.82				N. S.					
Z_3	1.8				N. S.						6.89				< 0.001					
Z_4	0				N. S.						1.036				N. S.					

Z_1 : + ve cases of rural versus urban groups

Z_2 : Positive of cases and control in rural group

Z_3 : + ve of cases and control in urban

Z_4 : + ve results of rural and urban of control group

* The difference was significant only between + ve cases in casess & control in urban as regard to C. M. V. IgM antibodies.

Table (13):

Mean absorbance level of C. M. V. IgG and IgM antibodies in cases and control.

Item	Control $\bar{X}$ ± S.D.	Cases $\bar{X}$ ± S.D.	T test	P value
- C. M. V. IgG	1.04 ± 0.537	0.649 ± 0.458	4.3	< 0.001
- C. M. V. IgM	0.699 ± 0.48	0.758 ± 0.496	0.69	N. S

* The mean absorbance level was significantly lower in cases than in control group as regard to C. M. V. IgG antibodies only.

Table (14):

Incidence of ANA among cases and control

Item	No. Ex.	Positive	%	Negative	%
Cases	92	12	13.04	80	86.96
Control	50	2	4	48	96

Z: 2.02 $P < 0.05$

* Positive test for ANA were significantly higher among cases.

Table (15):

Incidence of ANA according to type of abortion

Item	No. Ex.	Positive	%	Negative	%
Primary aborters	64	9	14.06	55	85.94
Secondary aborters	28	3	10.71	25	89.29
Total no.	92	12	13.04	80	86.96
X^2 test		0.460			
P value		N. S.			

* No significant difference according to type of abortion.

Table (16):

Incidence of ANA according to num ber of abortions.

Item	No. Ex.	Positive	%	Negative	%
Less than 5 times	57	7	12.28	50	87.72
More than 5 times	35	5	14.29	30	85.71
Total no.	92	12	13.04	80	86.96
X^2		0.291			
P value		N. S.			

* No significant difference as regard to number of abortions.

Table (17 a):

Incidence of ANA according to age group in cases.

Item	No. Ex.	Positive	%	Negative	%
From 19- 25 y	42	6	14.29	36	85.71
From 26- 30 y	27	3	11.11	24	88.89
From 31- 35 y	23	3	13.04	20	86.96
Total no.	92	12	13.04	80	86.96
Z_1		0.392 N. S.			
Z_2		0.141 N. S.			
Z_3		0.208 N. S.			

* No significant difference according to age group.

Table (17 b):

Incidence of A. N. A according to age groups among cases and control.

Item	No. Ex.	Cases					Control			
		Positive	%	Negative	%	No. Ex.	Positive	%	Negative	%
19-25 y	42	6	14.29	36	85.71	22	1	4.55	21	95.45
26-30 y	27	3	11.11	24	88.89	15	1	6.67	14	93.33
31-35 y	23	3	13.04	20	86.96	13	-	-	13	100
Total	92	12	13.04	80	86.96	50	2	4	48	96

Z_1 : Group I cases versus groups I control = 1.393 N. S.

Z_2 : Group II cases versus groups II control = 0.502 N. S.

Z_3 : Group III cases versus groups III control = 1.857 N. S.

* No significant differences were reported between different groups

Table (18):

Incidence of total IgM antibodies level in cases and control

Item	No. Ex.	+	%	++	%	+++	%	++++	%
Cases	92	5	5.43	18	19.57	62	67.39	7	7.61
Control	50	2	4	15	30	30	60	3	6
Z		0.38		1.41		0.881		0.36	
P		N. S.		N. S.		N. S.		N.S.	

* Devided according to concentration of reference sera where: (1) + = ↓ 31 mg %

(2) ++ = 32- 133 mg %

(3) +++ = 134- 308 mg %

(4) ++++ = ↑ 308 mg %

* At high level of total serum IgM (++++) the cases were non- significantly higher than control

Table (19):

Incidence of total IgM antibodies according to type of abortion

Item	No. Ex.	+	%	++	%	+++	%	++++	%
Primary aborters	64	4	6.25	10	15.63	45	70.31	5	7.81
Secondary aborters	28	1	3.57	8	28.57	17	60.17	2	11.76
Total no.	92	5	5.43	18	19.57	62	67.39	7	7.61
Z test		0.52		1.44		0.90		0.111	
P value		N. S.		N. S.		N. S.		N.S.	

* No significant difference according to type of abortion.

Table (20):

Incidence of total IgM antibodies according to frequency of abortion

Item	No. Ex.	+	%	++	%	+++	%	++++	%
Less than 5 times	57	3	5.26	9	15.79	39	68.42	6	10.53
More than 5 times	35	2	5.71	9	25.72	23	65.71	1	2.86
Total no.	92	5	5.43	18	19.57	62	67.39	7	7.61
Z test		0.09		1.17		0.27		1.35	
P value		N. S.		N. S.		N. S.		N.S.	

* No significant difference was reported according to the nomber of abortions

Table (21a):
Incidence of total IgM antibodies according to age group.

Item	No. Ex.	+	%	++	%	+++	%	++++	%
From 19- 25 y	42	2	4.77	5	11.90	30	71.43	5	11.90
From 26- 30 y	27	1	3.70	3	11.11	21	77.78	2	7.41
From 31- 35 y	23	2	8.69	10	43.48	11	47.83	-	-
Total no.	92	5	5.43	18	19.57	62	67.39	7	7.61
Z_1		0.21	N. S.	0.1	N. S.	0.59	N. S.	0.604	N. S.
Z_2		0.63	N. S.	2.89	< 0.01	1.89	N. S.	1.72	N. S.
Z_3		0.74	N. S.	2.61	< 0.01	2.199	< 0.01	1.33	N. S.

* At medium concentration level (++) of total IgM, age group from 31-35 years were significantly higher than other age groups
* At medium concent. (+++) age group 26-30 years were significantly higher.

Table (21 b):

Incidence of total IgM at high concentration level (+ 4) among cases and control according to age groups.

Item	Cases				Control	
	No. Ex.	Positive	%	No. Ex.	Positive	%
19-25 y	42	5	11.9	22	3	13.6
26-30 y	27	2	7.41	15	-	0
31-35 y	23	-	0	13	-	0
Total	92	7	7.61	50	3	6

Z_1 : Group I cases versus groups I control = 0.192 N. S.

Z_2 : Group II cases versus groups II control = 1.47 N. S.

Z_3 : Group III cases versus groups III control = 0 N. S.

* No significant differences between different groups were reported

Table (22):

Incidence of total IgM antibody level in cases and control

Item	Control $\bar{X}$ ± S.D.	Cases $\bar{X}$ ± S.D.	T test	P value
Total IgM	173.02 ± 84.02	183.52 ± 90.65	0.65	N. S

* Mean concentration levels of total IgM were non- significantly higher than that of control.

Table (23):

Incidence of other criteria (C. M. V. antibodies, IgG & IgM, total IgM higher level and A. N. A.) among women positive for HLA- B12 in cases and control.

Item	Total No. Examined	HLA - B 12 negative	HLA - B 12 Positive	C. M. V. antibodies				Total IgM		ANA		HLA - B 12 women		HLA - B 12 women	
				IgG + 4	%	IgM	%	High level + 4	%		%	Positive for criteria	%	-ve for these criteria	%
Cases	92	79	13	3	23.08	1	7.69	2	15.38	1	7.69	7	53.85	6	46.15
Control	50	43	7	2	28.37	-	-	1	14.23	-	-	3	42.86	4	57.14
Z test		0.02	0.025	1.4		0.75		0.66		0.75		0.47		0.47	
P value		N. S.	N. S.	N. S.		N. S.		N. S.		N. S.		N. S.		N. S.	

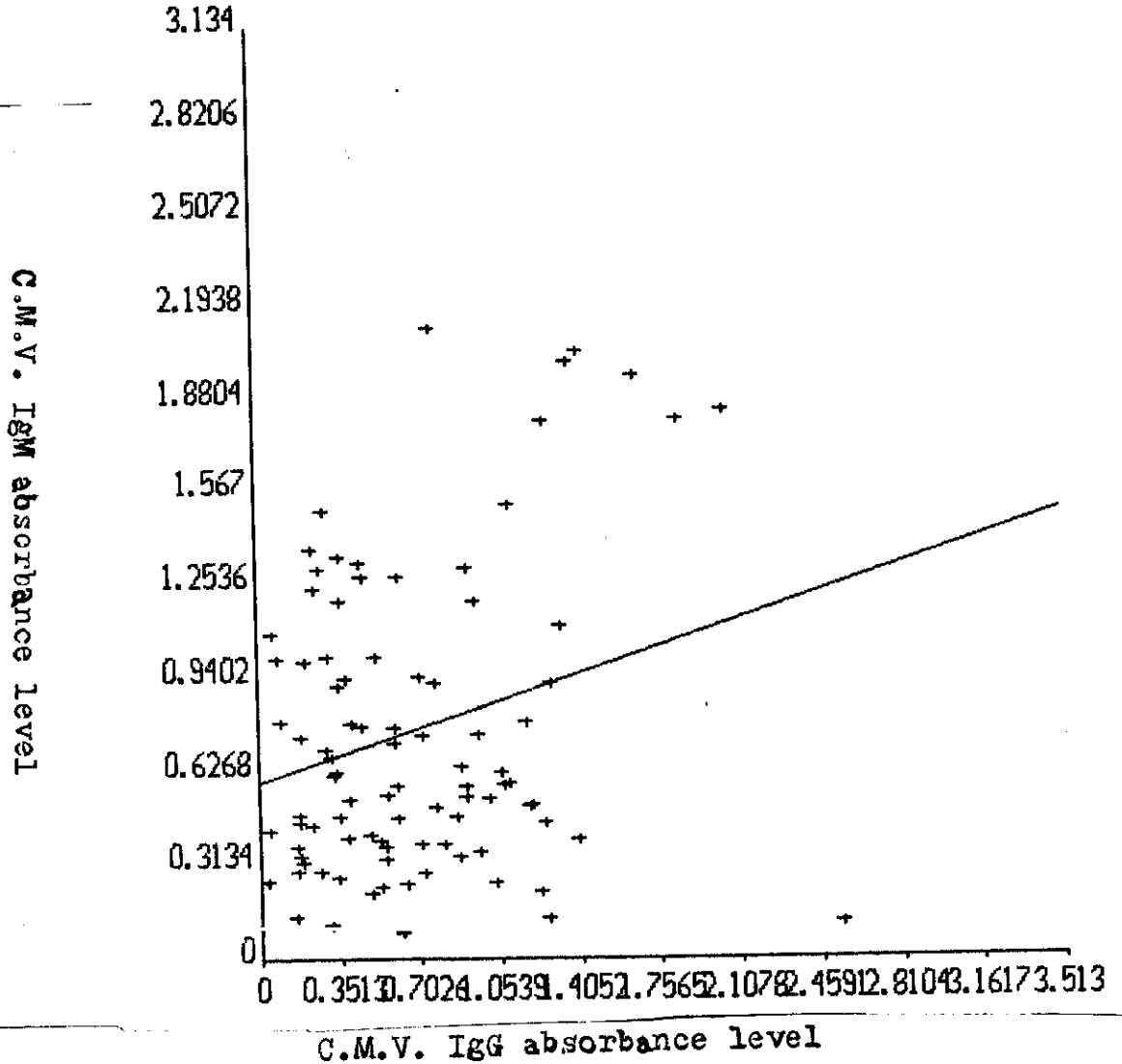
* Among the thirteen positive cases for HLA- B12, 3 were +ve for C. M. V .IgG Abs at high absorbance level (+4), one +ve for C. M. V. IgM Abs, 2 with high sreum concentration (+4) of total IgM, and one + ve for ANA.

Table (24):

Incidence of other criteria (C. M. V. antibodies, IgG & IgM, total IgM higher level and A. N. A.) among women positive for HLA- B17 in cases and control.

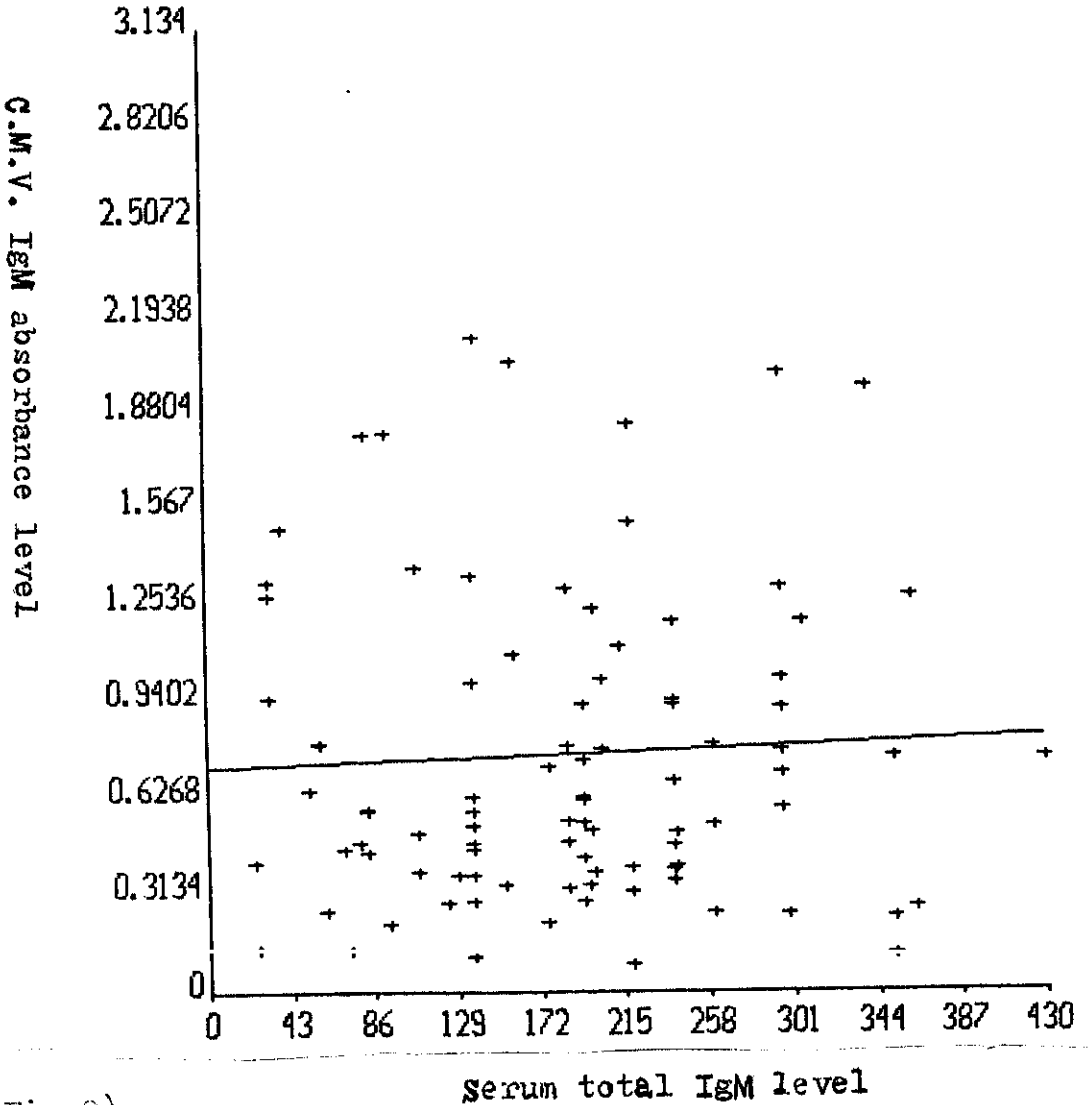
Item	Total No. Examined	HLA - B 17 negative	HLA - B 17 Positive	C. M. V. antibodies				Total IgM		ANA		HLA - B 17 women		HLA - B 17 women	
				IgG + 4	%	IgM	%	High level + 4	%		%	Positive for criteria	%	-ve for these criteria	%
Cases	92	86	6	1	16.67	-	-	-	-	1	16.67	2	33.33	4	66.67
Control	50	47	3	1	33.33	-		-	-	-	-	1	33.33	2	66.67
Z test		0.62	0.161	0.75		-		-		-		-		-	
P value		N. S.	N. S.	N. S.		N. S.		N. S.		N. S.		N. S.		N. S.	

* Among the six positive cases for HLA- B17, one case +ve for C.M.V. IgG abs at high absorbance level (+4), and one case +ve for ANA.



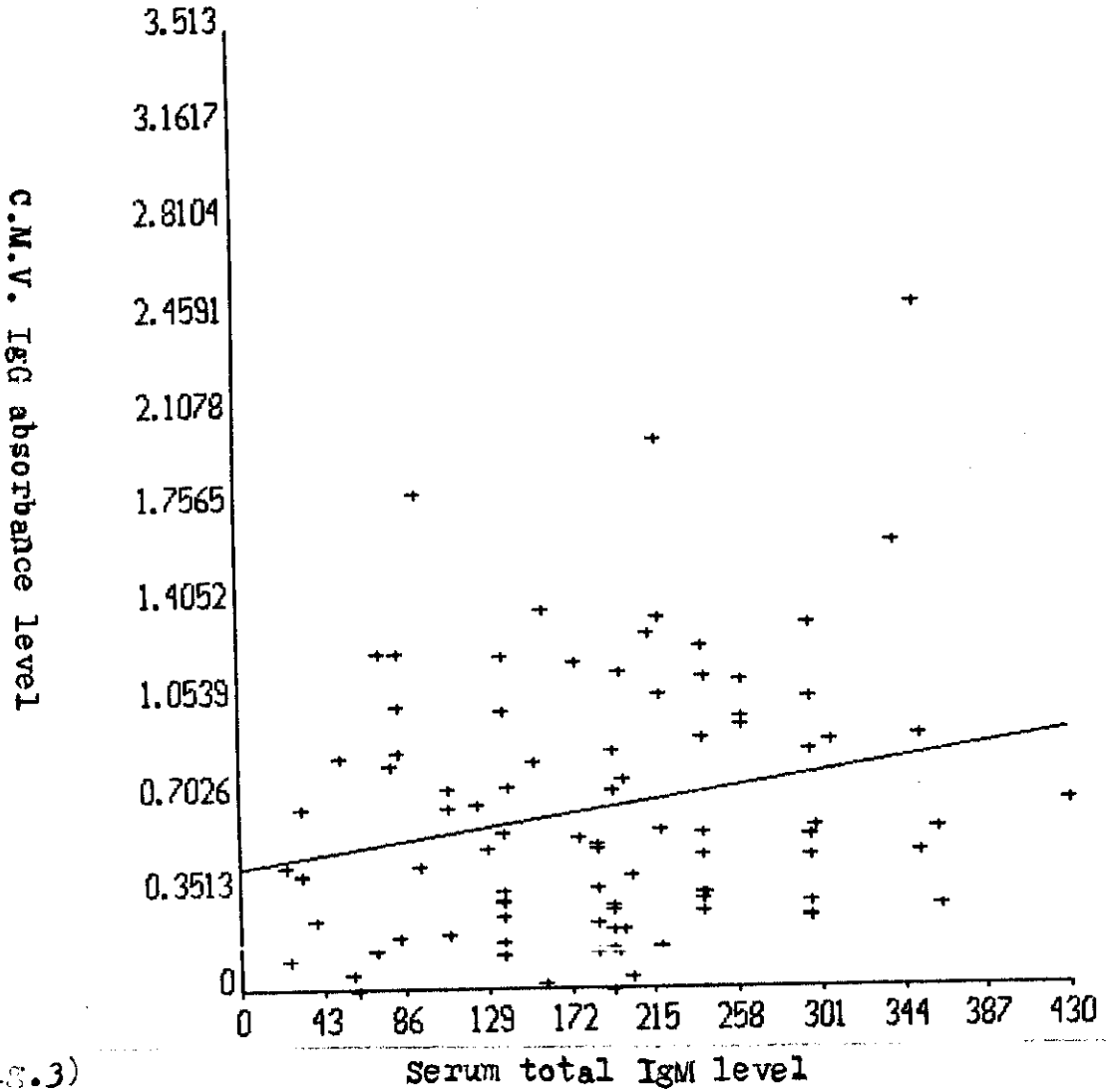
(Fig.1)

- A significant relation between C.M.V. IgG and IgM antibodies was reported ($r = 0.25$ $P < 0.05$)



(Fig.2)

Non significant relation between C.M.V. IgM and Serum total IgM was reported (r = 0.04 N.S.)



(Fig.3)

A significant relation between C.M.V. IgG absorbance level and serum total IgM was reported ($r = 0.22$ $P < 0.05$)