CHAPTER 4

RESULTS

Results

The results of measuring the immunoglobulins IgG , IgM , and IgA in the serum of the diabetic pregnant , normal pregnant , and nonpregnant diabetic group was as follows :

Pregnant Group with Diabetes , Table (6 & 7)

1 - First Trimester

In this group the levels of IgG , IgM , and IgA were higher than normal pregnancy . Fig.(3,4). The level of IgG was increased in 3 patients out of 10 (30 %) and IgM in 5 patients (50 %) . Significant increase in the mean values of IgG and IgM was found in relation to normal pregnancy . As regard to IgA , the level increased in 4 patients out of 10 (40 %) . The increase in the mean value was nonsignificant .

2 - Second Trimester:

In this group , the level of IgG increased in 3 patients out of 10 (30 %) and IgM in 2 patients (20 %) . Significant increase in the mean values of IgG and IgM was found in relation to normal pregnancy . As regard to

IgA , the level was found high in 3 patients out of 10 (30 %) . The increase in the mean value was nonsignificant in relation to normal pregnancy .

3 - Third Trimester

In this group the level of IgG was increased in 3 patients out of 10 (30 %) , and IgM in 4 patients out of 10 (40 %) . The increase in the mean value was significant in relation to normal pregnancy . As regard to IgA , 2 patients out of 10 ((20 %) patients had high values . The increase in the mean value was nonsignificant in relation to normal pregnancy .

Results of Ig values During Diabetic Pregnancy , Fig (3,4)

The level of IgG showed a decline as pregnancy progresses , highest values were recorded in the first trimester and lowest in the third . A significant decrease of IgG was found in the first in relation to the second trimester and in the second in relation to the third trimester . As regard to IgM and IgA the lowest levels were recorded in the second trimester while highest values were in the first trimester . The changes were significant in relation to normal pregnancy . IgA and IgM recorded significant

higher levels , in diabetic pregnancy , in the mean tri- group , in relation to normal pregnancy , Table (7) .

Pregnant Group Without Diabetes (Normal Pregnancy),Table 6.7

1 - First Trimester

In this group 3 mothers out of 10 had low values of IgG (30%) and 4 out of 10 (40 %) had decreased IgM . A significant decrease was found in IgM while IgA and IgG showed nonsignificant change in relation to the normal control group .

2 - Second Trimester

In this group 4 pregnant out of 10 (40 %) had low values of IgG . The decrease in mean IgG was significant in relation to normal nonpregnant control . The levels of IgM and IgA showed nonsignificant changes .

3 - Third Trimester

In this group 5 pregnant out of 10 (50 %) had decreased IgG and 4 out of 10 (40 %) had decreased IgM . There was a significant decrease in mean IgG and IgM groups in relation to normal nonpregnant controls . The

level of IgA showed nonsignificant change .

Results of Ig Values During Normal Pregnancy

There was a significant decrease in IgG gradually as pregnancy progresses . As regard to IgM , the level was significantly low in the first and third trimesters while in the second trimester a nonsignificant increase was found .The IgA level showed nonsignificant change throughout pregnancy . Fig. (3 & 4)

Thus a significant difference between late pregnancy and its begining , was found .

Nonpregnant Diabetic Group , Table (8)

In this group the value of IgA increased in 7 patients out of 10 (70 %) . The increased in the mean value of IgA was significant in relation to healthy control group . There was nonsignificant difference in IgG and IgM in relation to normal controls ,. Fig.(5.)

As regard to maternal age of the diabetic pregnant patients , Table (9), the level of IgG was significantly lower in the fourth and fifth decades in comparison to

the third decade , $p < 0.05$.

The level of IgM was significantly lower in the fourth decade in relation to the third decade . But significantly higher in the fifth decade in relation to the third decade .

IgA showed significant increase in the fourth decade . while a significant decrease was found in the fifth decade in relation to the third decade .

As regard to duration of the diabetes in relation to the immunoglobulin levels in the diabetic pregnant patients , the level of IgA was significantly increased in patients suffering from diabetes for 1 - 7 years in relation to those diabetic for less than one year . The levels of IgG and IgM were nonsignificantly changed in relation to the duration of diabetes , Table (12).

Significant increase in IgG and IgM were found in primigravidae in relation to multigravidae , Table(13) . Nonsignificant difference was found as regard to IgA .

The correlation of the Ig levels and the differences in the blood sugar level , type of treatment , history of taking contraceptive pills and other complications , was nonsignificant , Tables (10 - 15) .

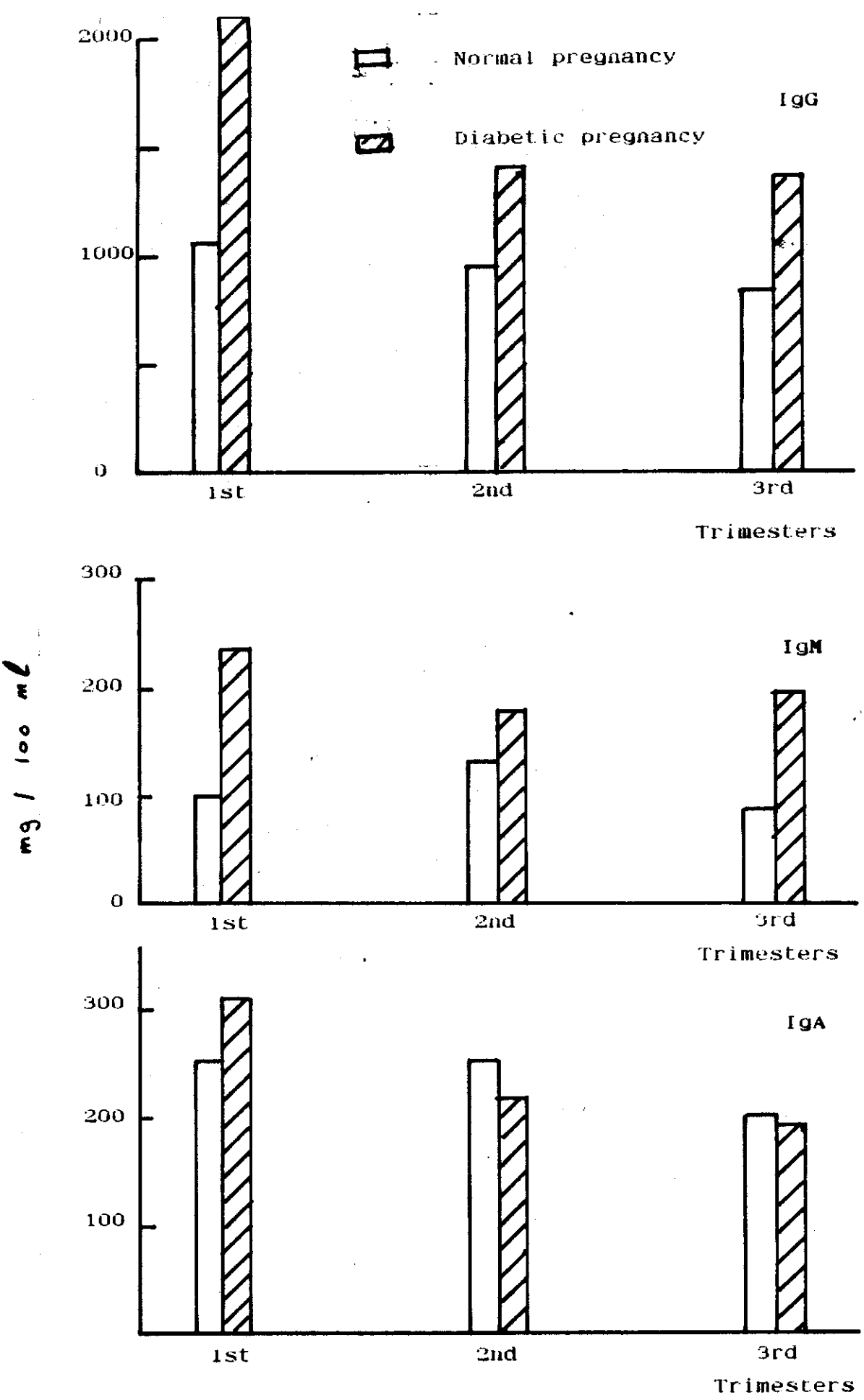

Fig. (3) Ig Values (G,M,and A) in normal and diabetic pregnancy

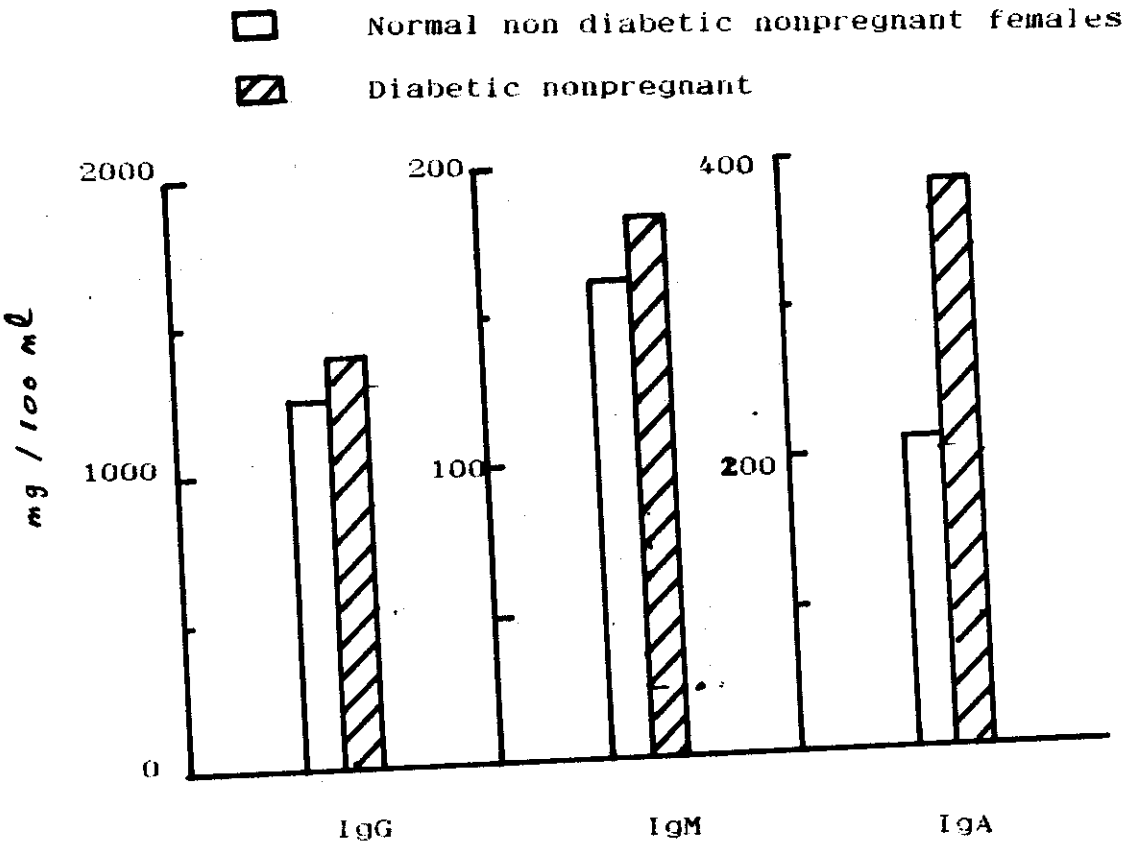

Fig. (4): Ig in nonpregnant, normal control and diabetic patients

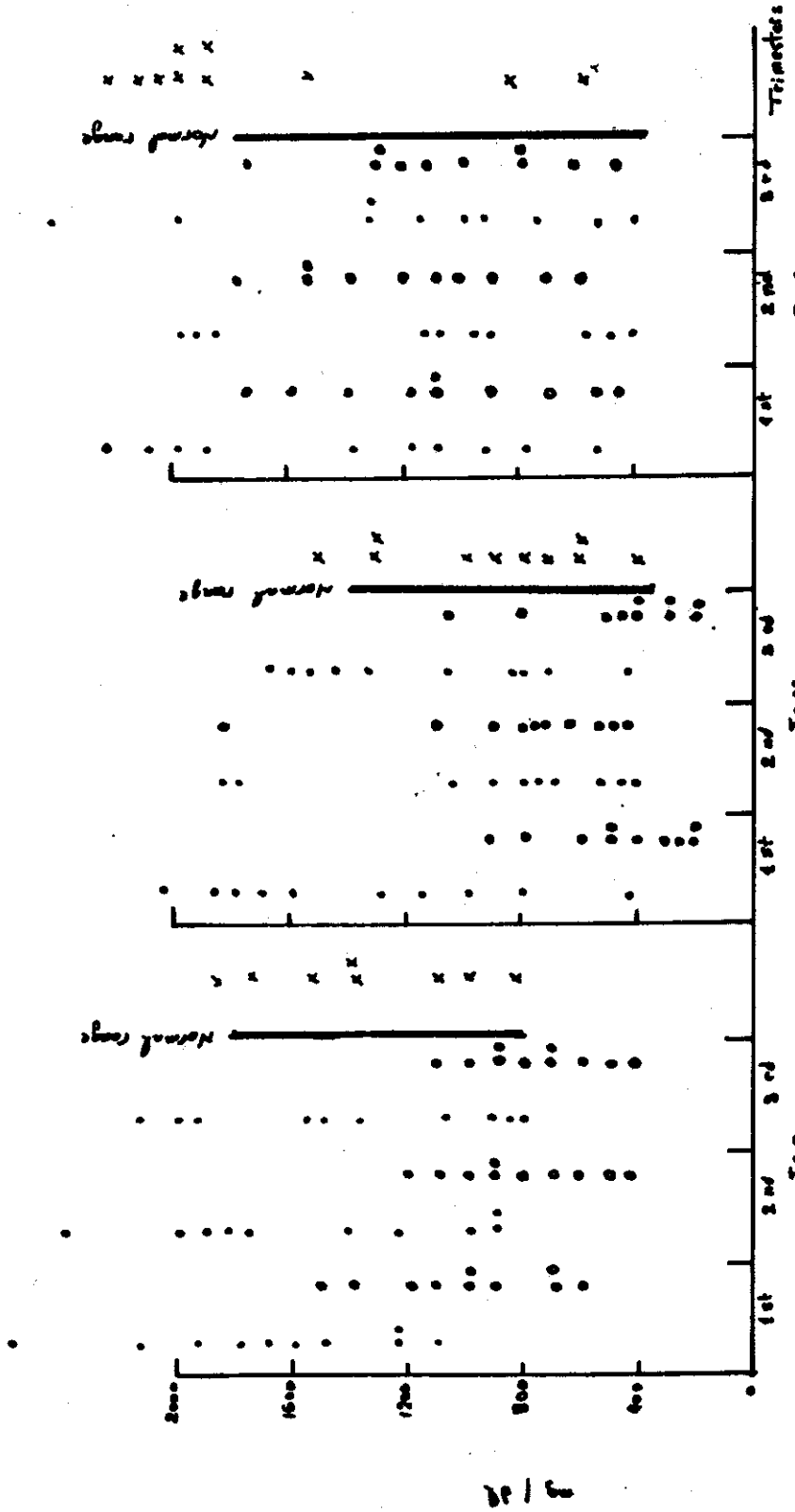

Fig. (5) Results of Immunoglobulins (G, M, and A) in groups studied
• Diabetic pregnant • normal pregnant Cases diabetic x Diabetic non Pregnant

Table (6)

Immunoglobulin Levels (G,M & A) in Diabetic Pregnancy (DP) and Normal Pregnancy (NP)

Tri-mester		(N)	Immunoglobulin Level (mg/100ml.)					
			IgG		IgM		IgA	
			DP	NP	DP	NP	DP	NP
1	Mean (± S.D.)	each group (10)	2220 (±1190)	1100 (±430)	243 (±136)	100.2 (±64.7)	310 (±179)	257 (±109)
	Significance of differences		S.		S.		N.S.	
2	Mean (± S.D.)	(10)	1400 (± 555)	972 (± 109)	176 (± 90.6)	134.7 (± 101)	220 (± 86)	256 (± 80)
	Significance of differences		S.		S.		N.S.	
3	Mean (± S.D.)	(10)	1380 (± 508)	826 (±64.7)	195 (± 72)	85 (± 38)	240 (± 136)	254 (± 82)
	Significance of differences		S.		S.		N.S.	

Table (7)

Effect of Diabetes

on Immunoglobulin (G, M &A) Levels (mg/100ml)

Groups studied	No.of patients	IgG Mean	IgG S.D.	IgM Mean	IgM S.D.	IgA Mean	IgA S.D.
Diabetic pregnant	(30)	1635	± 7.5	205	± 96.2	257	± 135
Normal pregnancy	(30)	1370	± 2.59	123	± 117	190	± 188
Significance of differences		N.S.		S.		S.	

Table (8)

Immunoglobulin Levels (G, M & A) (mg/ml)

in Diabetic Nonpregnant and Normal Females

		Immunoglobulin level			
		N	IgG	IgM	IgA
Diabetic non pregnant	Mean (± S.D.)	10	1440 ± 324	125 ± 46	382 ± 162
Normal non diabetic non pregnant females	Mean / S.D.	10	1250 ± 270	160 ± 44	210 ± 80
Significance difference			N.S.	N.S.	S.

P = 0.05 level
N.S. = Not significant

Table (9)

Immunoglobulin (G,M & A) (mg/100 ml) in Diabetic Pregnancy and Maternal Age

Groups studied	No.of patients	IgG Mean	IgG S.D.	IgM Mean	IgM S.D.	IgA Mean	IgA S.D.
Diabetic pregnant in the third decade	(8)	1350	± 250	170	± 56	190	± 95
Diabetic pregnant in the fourth decade	(15)	1120	± 330	148	± 35	218	± 42.6
Diabetic pregnant in the fifth	(7)	870	± 25	208	± 12	180	± 10

Table (10)

Immunoglobulin and Other Complications

(G, M & A) (mg/100 ml)

Groups studied	No.of patients	IgG Mean	IgG S.D.	IgM Mean	IgM S.D.	IgA Mean	IgA S.D.
Diabetic pregnant with hypertension	(3)	1760	± 555	180	± 71	165	± 42
Diabetic pregnant without hypertension	(27)	1430	± 651	192	± 86	270	± 162
Significance of differences		N.S.		N.S.		N.S.	

P = 0.05 Level
N.S. = not significant

Table (11)

Immunoglobulin (G, M & A) Levels (mg/100ml) and type of previous treatment for diabetes

Groups studied	No.of patients	IgG Mean	IgG S.D.	IgM Mean	IgM S.D.	IgA Mean	IgA S.D.
Diabetic pregnant treated previously with oral hypoglycaemic drugs	(24)	1510	± 660	188	± 84.3	227	± 126
Diabetic pregnant treated previously with insulin	(6)	1252	± 463	208	± 95	300	± 85.3
Significance of difference		N.S.		N.S.		N.S.	

Table (12)

Immunoglobulin (G, M & A) (mg/100ml) in Diabetic Pregnancy with the Duration of Diabetes

Groups studied	No.of patients	IgG Mean	IgG S.D.	IgM Mean	IgM S.D.	IgA Mean	IgA S.D.
Diabetic pregnant with diabetes < 1 year	(6)	1370	± 463	185	± 66	236	± 176
Diabetic pregnant with diabetes 1-7 yrs.	(22)	1530	± 751	192	± 93	314.2	± 62
Diabetic pregnant > 7 yrs.	(2)	1130	± 205	230	± 98.3	227.5	± 55.8

P = 0.05 level
N.S. = Not significant

Table (13)

Immunoglobulin (G, M & A) (mg/100ml) and Parity

Groups studied	No.of patients	IgG Mean	IgG S.D.	IgM Mean	IgM S.D.	IgA Mean	IgA S.D.
Diabetic pregnant primigravidae	(7)	1870	± 680	261	± 65	241	± 94
Diabetic pregnant multigravidae	(23)	1420	± 650	182	± 84.3	235	± 126
Significance of difference		S.		S.		N.S	

Table (14)

Immunoglobulin (G, M & A) (mg/100ml) and Contraceptive Pills

Groups studied	No.of patients	IgG Mean	IgG S.D.	IgM Mean	IgM S.D.	IgA Mean	IgA S.D.
Diabetic pregnant with history of taking contraceptive pills	(5)	1430	± 485	152	± 56	270	± 183
Diabetic pregnant with no history of taking contraceptive pills	(15)	1450	± 690	188	± 83	218	± 99
Significance of differences		N.S.		N.S.		N.S.	

P = 0.05 Level
N.S. = not significant

Table (15)

Immunoglobulin (G, M & A) (mg/100ml) and Blood Sugar Level

Groups studied	No.of patients	IgG Mean	IgG S.D.	IgM Mean	IgM S.D.	IgA Mean	IgA S.D.
- Diabetic pregnant with controlled blood sugar level (post prandial 70-110 mg/dl)	(10)	1600	± 909	196	± 102	280	± 175
- Diabetic pregnant with high blood sugar level (post prandial > 110 mg/dl)	(20)	1400	± 375	195	± 77	319	± 109
Significance of differences		N.S.		N.S.		N.S.	

P = 0.05 level
N.S. = Not significant

Table (16)

Results of Groups Studied

Groups studied	No.of patients	IgG Mean	IgG S.D.	IgM Mean	IgM S.D.	IgA Mean	IgA S.D.
Diabetic pregnant	(30)	1635	± 7.5	205	± 96.2	257	± 135
Diabetic non-pregnant	(10)	1440	± 324	125	± 46	382	± 162
Normal pregnancy	(30)	1370	± 2.5	123	± 117	190	± 188
Non diabetic non pregnant	(10)	1250	± 270	160	± 44	210	± 80

Results are expressed in (mg/100ml)