Results

The current work study was conducted on 50 children recruited from the pediatric outpatient clinic or in patient wards of Both Benha University Hospital and Tanta University Hospital.

All cases were subjected to detailed history taking, clinical examination, and subjected them to complete blood picture with eosinophilic count, total IgE and specific IgE for cow milk antigen for group (A) only.

The data of the study were presented in Tables (1) to (22) and Figures (1) to (10).

Table (1): Sex distribution in relation to all cases in studied groups

			Sex		
			Male	**Female**	**Total**
GA		N	15	10	25
		%	60	40	100
GB		N	8	5	13
		%	61.5	38.5	100
GC		N	5	7	12
		%	41.7	58.3	100
Total		N	28	22	50
		%	56	44	100
Chi-Square	X^2		1.325		
	P-value		>0.05		

*p. value >0.05 is non significant.

Fig. (1): Sex distribution in relation to all cases in studied groups

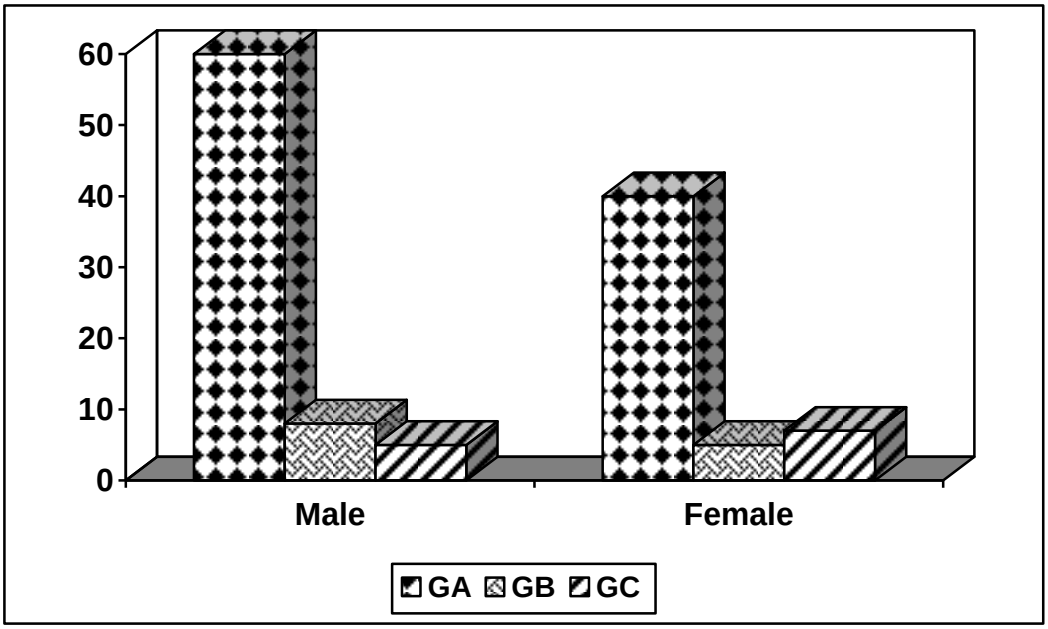


Table (1) & Fig. (1): Shows that no statistical significant difference according to sex.

Table (2): Prevalence of cases by age in studied groups

	Age (per months)			
	Range	Mean ± SD	F -Test	
			F	P-value
GA	6 - 9	7.96 ± 1.39	67.001	<0.001
GB	24 - 72	3.73 ± 1.27		
GC	30 - 72	1.03 ± 0.29		

* p. value <0.001 is considered significant.

Fig. (2): Prevalence of cases by age in studied groups

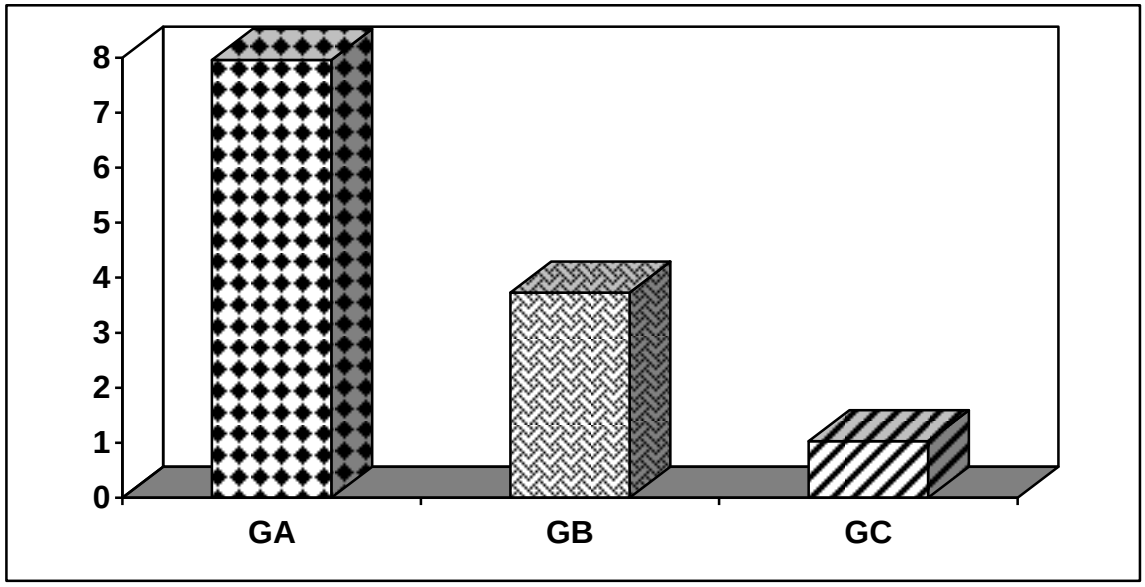


Table (2) & Fig (2) to shows statistical significant difference according to age

Table (3): Social relationship to allergic cases in different groups

		Social level			
		low	**middle**	**high**	**Total**
GA	N	17	6	2	25
	%	68	24	8	
GB	N	7	5	1	13
	%	53.8	38.5	7.7	100
GC	N	7	4	1	12
	%	58.3	33.3	8.33	100
Total	N	31	15	4	50
	%	62	30	8	100
Chi-Square	X^2	0.968			
	P-value	>0.05			

*p. value >0.05 is non significant.

Fig. (3): Social relationship to allergic cases in different groups

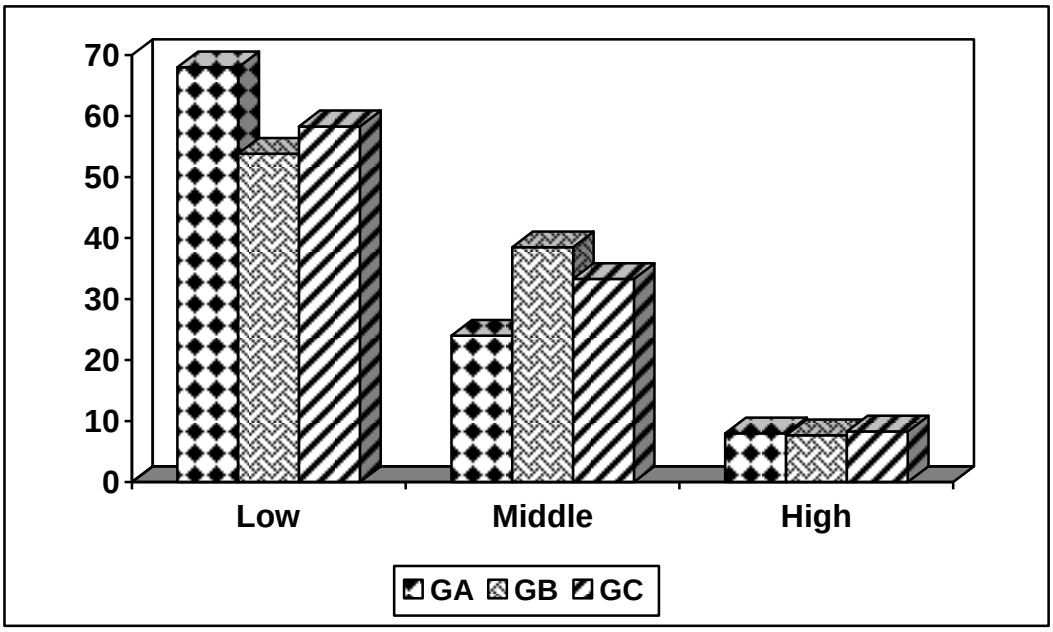


Table (3) & Fig. (3) Shows that no statistical significant difference between the 3 studied groups according to social level.

Table (4): The personal history of (atopy) in different studied group

			phallergy		
			positive	negative	Total
GA (n=25)		N	2	23	25
		%	8	92	100
GB (n=13)		N	5	8	13
		%	38.5	61.5	100
GC (n=12)		N	4	8	12
		%	33.3	66.7	100
Total (n=50)		N	11	39	50
		%	22	78	100
Chi-Square	X^2		5.807		
	P-value		<0.05		

* p. value <0.05 is considered significant.

Fig. (4): The personal history of (atopy) in different studied groups

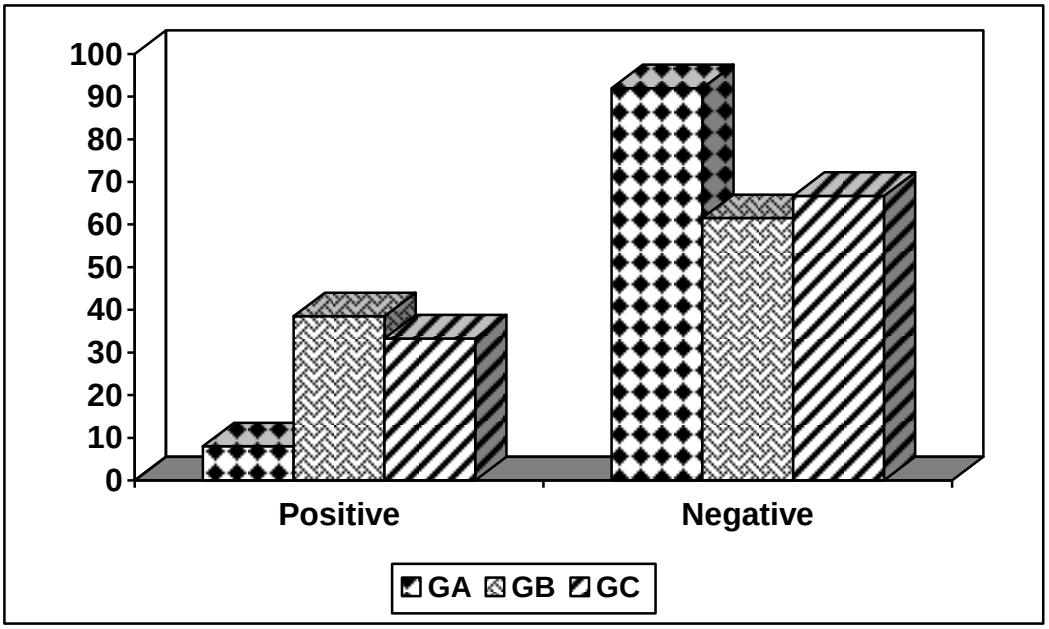


Table (4) & Fig. (4): Shows that there is a statistical significant different according to personal history of allergy (a topy) among the 3 studied groups.

Table (5): History data in the study group A

History data in the study group A				
	Child class	**N**	**%**	**p. value**
AGE	**≤ year**	10	40	>0.05
	> 1 year	15	60	
Sex	**Male**	15	60	>0.05
	Female	10	40	
Age of onset	**≤ 6 months**	20	80	<0.05
	> 6 months	5	20	
Duration of exclusive breast feeding	**≤ 6 months**	23	92	<0.05
	> 6 months	2	8	
First introduction of cow's milk	**≤ 6 months**	23	92	<0.05
	> 6 months	2	8	
Type of milk	**Row+ humanized**	22	88	<0.05
	Diluted	3	12	
GIT disturbance	**Yes**	15	60	>0.05
	No	10	40	

p. value <0.05 is considered significant
p. value >0.05 is Non significant

Table (6): Relevant of gastrointestinal manifestation in different studied groups.

		G.I.T		
		positive	**negative**	**Total**
GA (n=25)	N	7	18	25
	%	28	72	100
GB (n=13)	N	2	11	13
	%	15.4	84.6	100
GC (n=12)	N	2	10	12
	%	16.7	83.3	100
Total (n=50)	N	11	39	50
	%	22	78	100
Chi-Square	X^2	1.055		
	P-value	<0.05		

* p. value <0.05 is considered significant.

Fig. (5): Relevant of gastrointestinal manifestation in different studied groups.

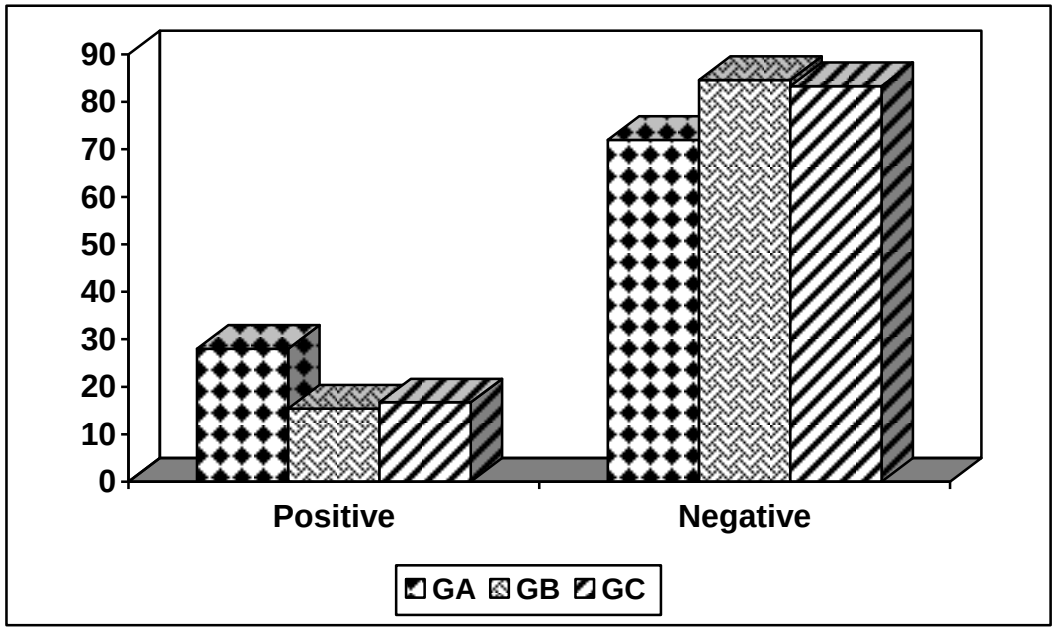


Table (6) & Fig (5): Shows that there is statistical significant deference among the 3 studied groups according to G.I.T manifestation of allergy

Table (7): Relevant of respiratory manifestation in different studied groups.

			Respiratory system (R.S)		
		positive	negative	positive rhinitis	Total
GA (n=25)	N	1	24	0	25
	%	4	96	0	100
GB (n=13)	N	11	0	2	13
	%	84.6	0	15.4	100
GC (n=12)	N	3	9	0	12
	%	25	75	0	100
Total (n=50)	N	15	33	2	50
	%	10	66	4	100
Chi-Square	X^2	36.488			
	P-value	< 0.001			

* p. value <0.001 is considered significant.

Fig. (6): Relevant of respiratory manifestation in different studied groups.

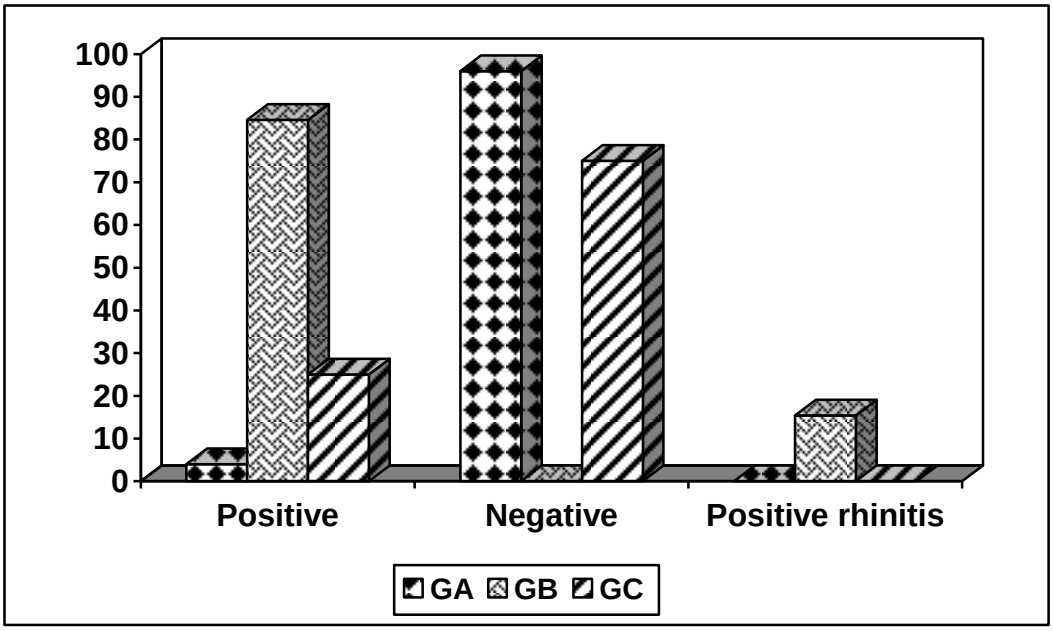


Table (7) & Fig (6): Shows that there is a statistical significant difference of respiratory sym as well as upper respiratory system (rhinitis) among studied groups.

Table (8): Comparison between different types of allergen in different cases of studied groups from history taking

	No. of cases	%	p. value
CAW milk	**28**	**56**	**<0.05***
Egg	**10**	**20**	
Fish	**8**	**16**	
Soy bean	**2**	**4**	
Peanuts	**3**	**6**	
Strawberry	**2**	**4**	
Orange and lemon	**2**	**4**	

*p. value < 0.05 is considered significant.

Table (9): Study of the interval between intake of foods (with specific allergen) and appearance of symptoms in different groups

	No of cases	<1 week	1-2 week	2-4 week	>4 week
Group A					
Diarrhae	12	4	1	2	5
Constipation	8	6	1	1	-
vomiting	5	4	1	-	-
Group B					
Bronchial asthma	11	3	2	-	6
rhinitis	2	2	-	-	-
recurrent otitis media (R.O.M)	1	-	-	1	-
Group C					
Urticaria	9	8	1	-	-
Atopic dermatitis	3	2	1		

Table (10): Age and basic anthropometric measurements among the selected cases from the 3 studied groups.

variables / group	GA n=25 Mean ±SD {Median (interquartile rang)}	GB n=13 Mean ±SD {Median (interquartile rang)}	GC n=12 Mean ±SD {Median (interquartile rang)}	GA Vs GB t/z* (p)	GA Vs GC t/z* (p)	GB Vs GC t/z* (p)
Age (ms)	7.96 + 1.39 {9(3)}	3.73 + 1.27 {3.6(4)}	3.75 + 1.03 {3.5(3.5)}	9.16 <0.001	9.31 <0.001	0.04 >0.05
Wt%	10.96 + 5.76 {10(21.5)}	9.01 + 1.21 {9.40(4.5)}	10.02 + 1.17 {9.95(4.10)}	1.34 <0.05	1.03 >0.05	2.12 <0.05
Hc%	94.58 + 4.08 {95.5(11.70)}	49.73 + 2.49 {50.5(9.70)}	50.16 + 0.65 {50.25(2)}	36.15 <0.001	31.42 <0.001	1.18 >0.05
Length%	89.79 + 9.48 {93.4(32.5)	98.15 + 9.05 {96(29)}	97.75 + 7.77 {95(28)}	2.52 <0.05	2.59 <0.05	0.24 >0.05

p. value <0.001 is considered significant.
p. value <0.05 is considered significant
p. value >0.05 is Non significant

Table (11): Hematological parameters among the selected cases from the 3 studied group.

variables / group	GA n=25 Mean ±SD {Median (interquartile rang)}	GB n=13 Mean ±SD {Median (interquartile rang)}	GC n=12 Mean ±SD {Median (interquartile rang)}	GA Vs GB t/z* (p)	GA Vs GC t/z* (p)	GB Vs GC t/z* (p)
R.B.C x10^6	4.08 + 0.49 {4.22(1.91)}	1.16 + 0.42 {4.20(1.62)}	4.12 + 0.33 {4.05(1)}	18.25 <0.001	0.26 >0.05	19.48 <0.001
HB g/d	10.47 + 2.29 {10.50(8.4)}	9.74 + 1.02 {9.7(3.50)}	9.16 + 0.88 {9.25(2.50)}	1.09 >0.05	1.09 >0.05	1.52 >0.05
W.B.C x10^3	10.96 + 5.76 {10(21.5)}	9.01 + 1.21 {9.4(4.5)	10.01 + 1.17 {9.95(4.10)}	1.20 >0.05	0.56 >0.05	2.10 <0.05
P-L-T x10^3	436.3 + 164.6 {420(628)}	353.3 + 61.99 {340(210)}	350.5 + 66.01 {350(234)}	1.75 >0.05	1.73 >0.05	0.11 >0.05

p. value <0.001 is considered significant.
p. value <0.05 is considered significant
p. value >0.05 is Non significant

Table (12): Relevant of past history and family history in studies groups

Past history	Yes		No	
	N	%	N	%
Skin allergy	13	26	37	74
Bronchial asthma	12	24	38	76
Recurrent diarrhae	5	10	45	90
Hematemesis	10	20	40	80
Bleeding per rectam	3	6	47	94
Hospitalization	10	20	40	80
Recurrent otitis media	3	6	47	94
Family history				
Rhinitis	5	10	45	90
Skin allergy	15	30	35	70
Bronchial asthma	30	60	20	40

Table (13): Presence of other allergic manifestation in relation to different patients in (3) studied groups

	Group A (CMA)	Group B with respiratory manifestation	Group C with cutanous manifestation	P. value
Gastrointestinal manifestation				
- Diarrhae	12	1	1	>0.05
- Constipation	8	-	2	
- Gasteroesophageal reflux (GER	6	1	-	
- Colic	3+	-	-	
- Vomiting	5	1	2	
Total	**25**	**13**	**12**	
*** Respiratory manifestation**				
- Bronchial asthma	1	11	-	>0.05
- Rhinitis	3	2	1	
- Recurrent otitis media (R.O.M)	-	1	-	
Total	**25**	**13**	**12**	
*** Cutanous manifestation**				
- Urticaria	-		9	>0.05
- Atopic dermatitis	2		3	
Total	**25**		**12**	
*** Others**				
- Migraine	-	-	1	
Total			**Total (12)**	

*p. value >0.05 is non significant.

Table (14): Statistical analysis of TIgE in all studied groups and sIgE in group A only

TIGE	GA	GB	GC
Range	7-210	18-80	12-100
Mean	29.28	44.46	42.25
SD	10.61	18.76	25.18
F. test	0.753		
p. value	>0.05		

*p. value >0.05 is non significant.

sIgE	
Minimum	0.20
Maximum	35.00
Mean + SD	5.46 ± 1.92
Median	1.60

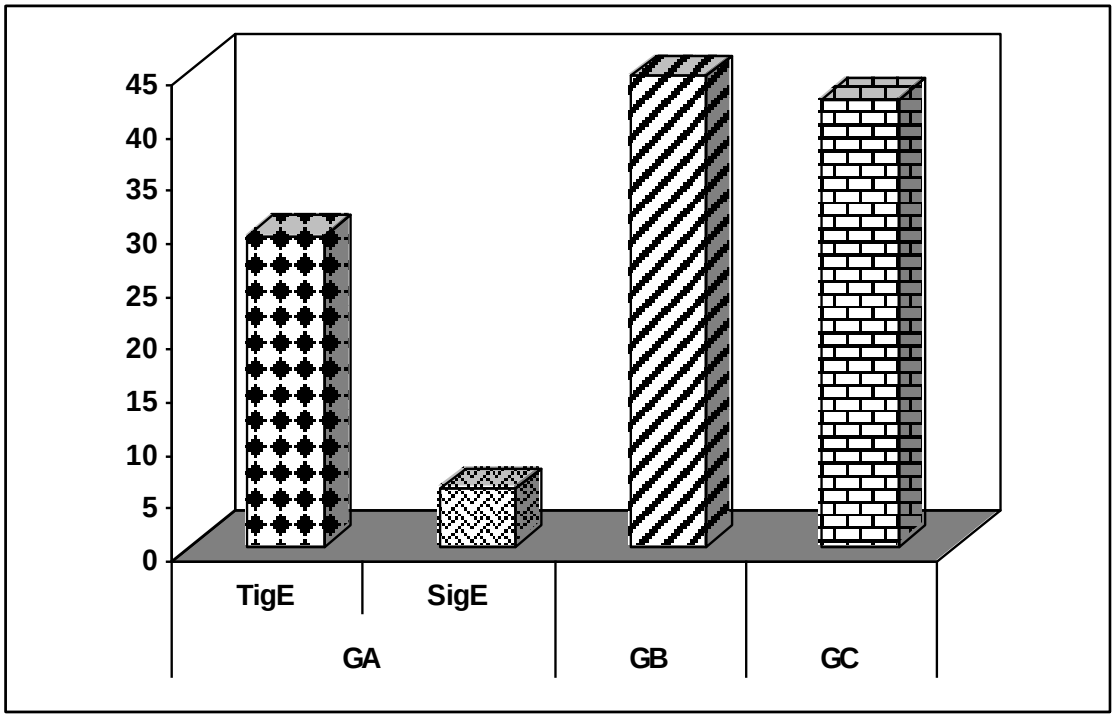


Fig. (7): Statistical analysis of TIgE in all studied groups and sIgE in group A only

Table (15): Relation between increased total IgE and family history of allergy among selected cases from all studied groups

		P.F.H allergy		N F.H allergy		X^2	P. value
		N	%	N	%		
GA	Elevated IgE	22	44	8	16	16.33	<0.001
	Normal IgE	3	6	17	34		
GB	Elevated IgE	9	18	5	10	2.48	0.112
	Normal IgE	4	8	8	16		
GC	Elevated IgE	10	20	5	10	4.44	<0.05
	Normal IgE	2	4	7	14		

*p. value < 0.001 is considered significant.
*p. value < 0.05 is considered significant.
P.F.H. = positive family history of allergy
N.F.H. = negative family history of allergy

Table (16): Study of total IgE level in relation to different manifestation

Patents groups	Total IgE	Number	%	p. value
Group A (CMA)				
Chronic diarrhae	Normal	2	8	< 0.05
	High	10	40	
Chronic constipation	Normal	1	4	< 0.05
	High	7	29	
GER	Normal	0	0	< 0.05
	High	5	20	
Group B				
Bronchial asthma	Normal	4	30.8	> 0.05
	High	9	69.2	
Group C				
Skin allergy	Normal	2	16.7	< 0.05
	High	10	83.3	

*p. value < 0.05 is considered significant.
*p. value >0.05 is non significant.
GER- gastro esophagial reflux

Table (16): Shows that there is statistical significant different among studied cases in group (A) as well as group (c) but there is no significant difference in group (B).

Table (17): Eosinophilia in different groups and all cases

Patients group	Eosinophilia	No	%	p. value
Group A (CMA)				
Diarrhae	**No**	**6**	**12**	**>0.05**
	Yes	**6**	**12**	
Constipation	**No**	**4**	**8**	
	Yes	**4**	**8**	
Group B (Respiratory manifestation)				
Bronchial asthma	**No**	**3**	**6**	**<0.05***
	Yes	**8**	**16**	
Rhinitis	**No**	**0**	**0**	
	Yes	**2**	**4**	
Group C (cutanous manifestation)				
Urticaria	**No**	**4**	**8**	**>0.05**
	Yes	**5**	**10**	
Atopeic dermatitis	**No**	**0**	**0**	
	Yes	**3**	**6**	

*p. value < 0.05 is considered significant.
*p. value >0.05 is non significant.

Table (18): Study of different diagnostic tests in relation to CMA status in group A (n=25)

Patients Groups		Number	CMA		p. value
			Negative N=3	Positive N=22	
Total IgE	Normal	3	2	1	0.098
	High	22	3	19	
Specific IgE for Cow milk	Normal	5	5	0	<0.001
	High	20	0	20	
Eosinophilia	Normal	15	5	10	0.408
	High	10	1	9	

*p. value < 0.001 is considered significant.
*p. value < 0.01 is considered significant.

Table (19): Study of complication recorded in relation to CAM group (A)

Manifestion	CMA -ve	CMA +ve	p. value
Under weight	5	8	**>0.05**
Under stature	11	8	
Anemia	3	8	
Hematemesis	0	1	
Bleeding per rectum	1	1	
hospitalization	2	6	

p. value >0.05 is Non significant

Table (20): Sensitivity and specificity of different tests

	Total IgE	Specific IgE (Cow milk)	Eosinophilia
Sensitivity	**100**	**100**	**82.6**
Specificity	**52**	**84**	**75.3**
P. value	**>0.05**	**<0.05**	**<0.05**

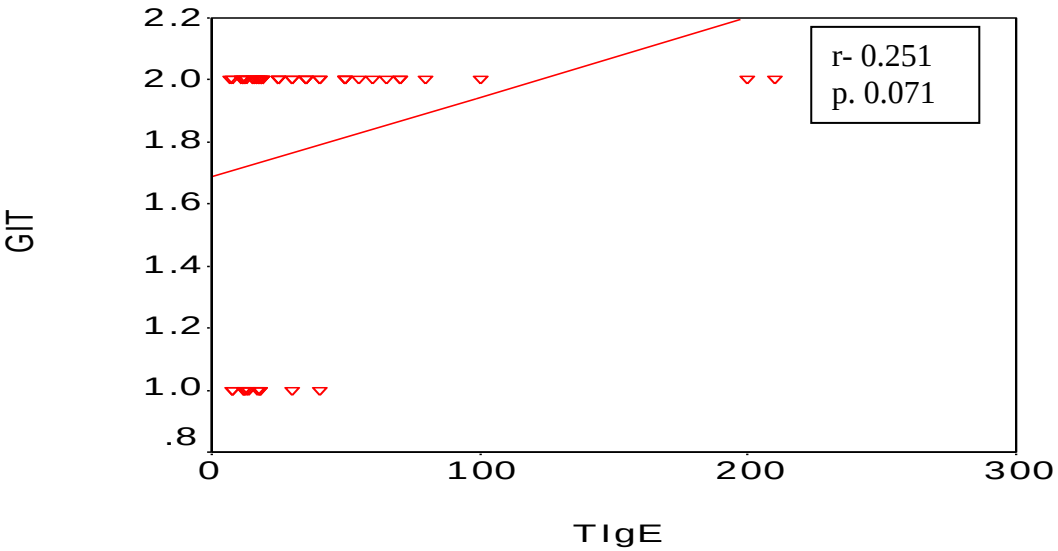
*p. value < 0.05 is considered significant.

Table (21): Family history of allergy in relation to different allergic manifestation in studied patients

The allergic manifestation	N	%	P. value
Group A			
Skin allergy	**5**	10	<0.05*
Bronchial asthma	**2**	4	
Rhinitis	**1**	2	
Total number of cases	**25**	50	
Group B			
bronchial asthma	**2**	4	>0.05
Rhinitis	**2**	4	
Skin allergy	**2**	4	
Total number of cases	**13**	26	
Group C			
Skin allergy	**3**	6	<0.05*
Bronchial asthma	**1**	2	
Rhinitis	**1**	2	
Total number cases	**12**	24	

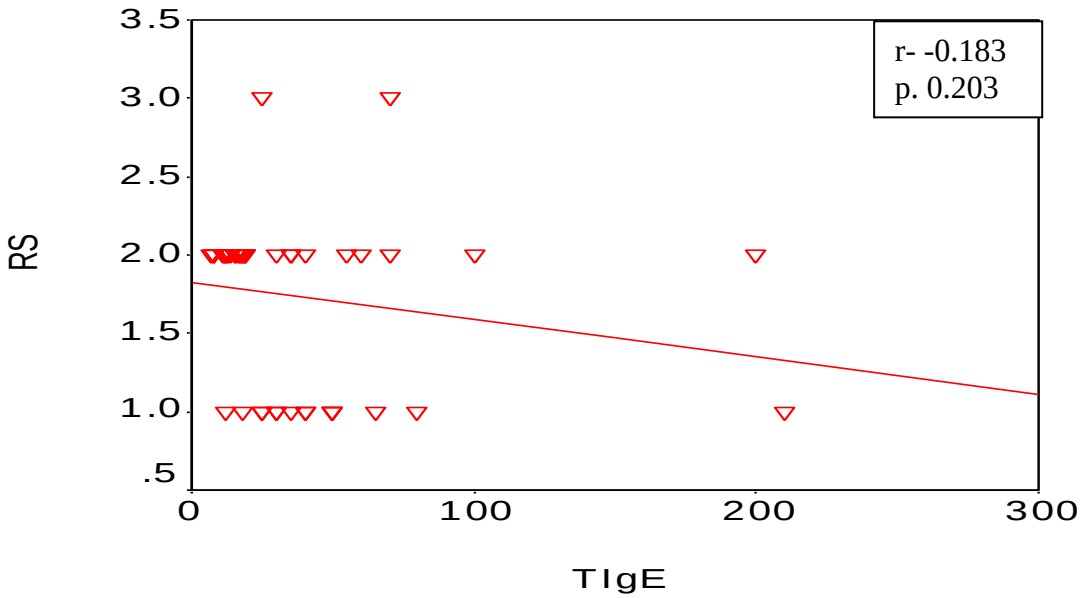
*p. value < 0.05 is considered significant.
*p. value >0.05 is non significant.

Fig (8): Correlation bet TIgE and gastrointestinal manifestation in studied groups



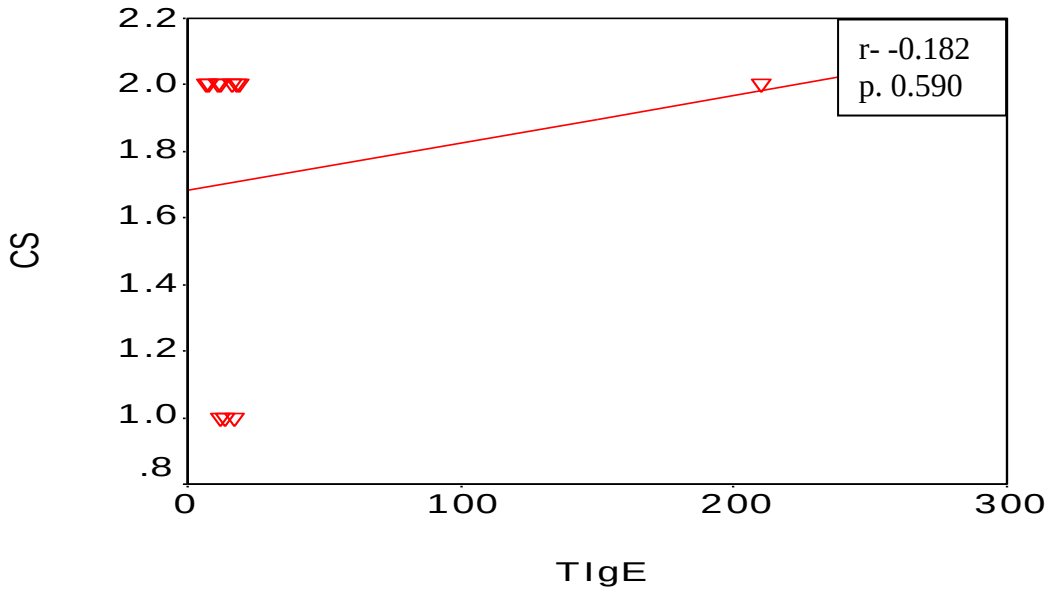
p. value < 0.05 is considered significant.

Fig (9): Correlation bet TIgE and respiratory manifestation in studied groups



p. value > 0.05 is non significant.

Fig (10): Correlation bet TIgE level and cutanious manifest in group C



*P. value >0.05 is non significant