Results

This is a study conducted on 80 children, 60 patients suffering from bronchial asthma and 20 healthy children taken as a control group. The results of our work were:

Table 1: Clinical data of the study group:

Study group		**Cases**		**Control**		**X^2**	**t**	**P**
Age mean±SD years		7.5 ± 3.4		8.5 ± 1.7		-	1.72	>0.05
		No.	**%**	**No.**	**%**			
Sex	**Male**	33	55	14	70	1.39	-	>0.05
	Female	27	45	6	30			
Residence	**Rural**	45	75	14	70	0.194	-	>0.05
	Urban	15	25	6	30			
Total		60		20				

This table shows that there was no significant difference as regard age, sex, residence (p=>0.05) distribution among the study group.

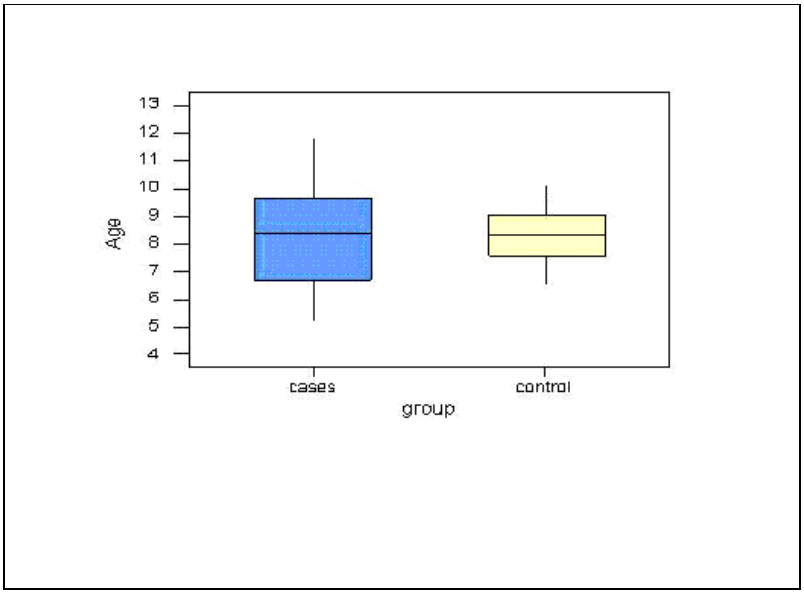

Figure 1: Age distribution among the study group.

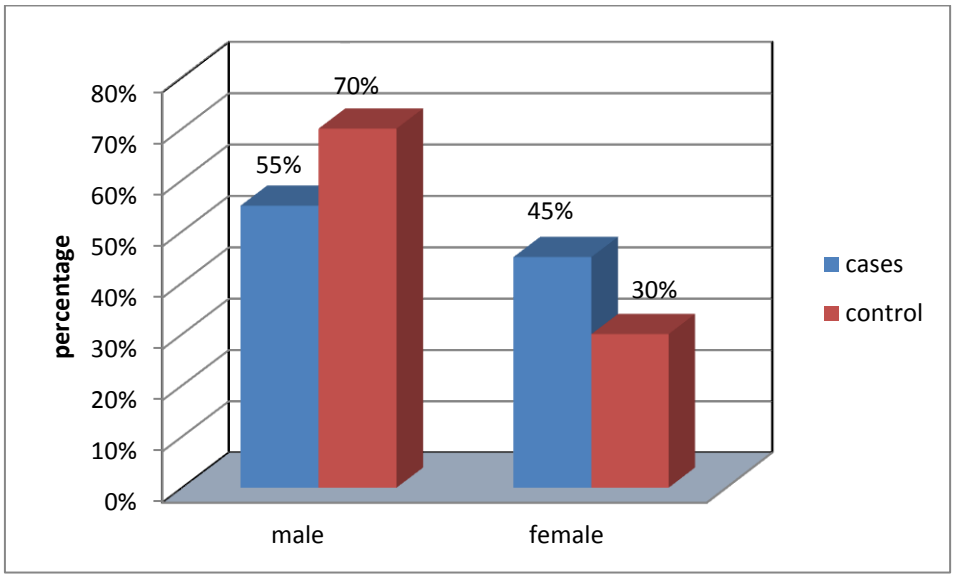

Figure 2:Sex distribution of the study groups.

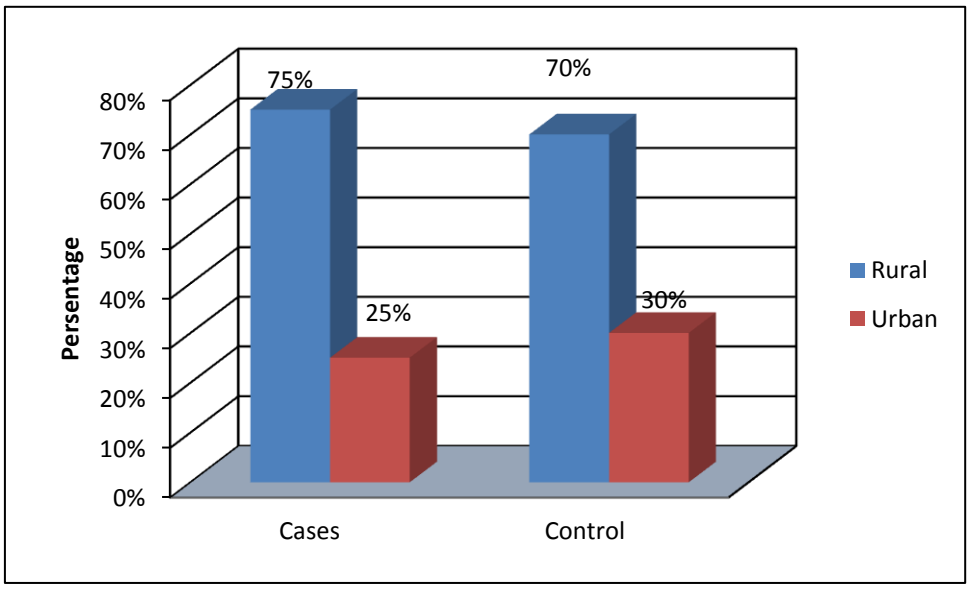

Figure 3: Residence distribution of the study group.

Table 2: Comparison between asthmatic patients and control groups as regard family history of atopy :

Study group		Cases		Control		X^2	P	Odds ratio		
		No	%	No	%	5.02	0.025	sig	up	low
Family history of atopy	+ve	22	36.6	2	10			5.2	24.6	1.1
	-ve	38	63.4	18	90					
Total		60		20						

This table shows that there was a significant difference as regard family history of atopy among the study group (p=0.025).with sig. (5.2) times more in the cases than the control.

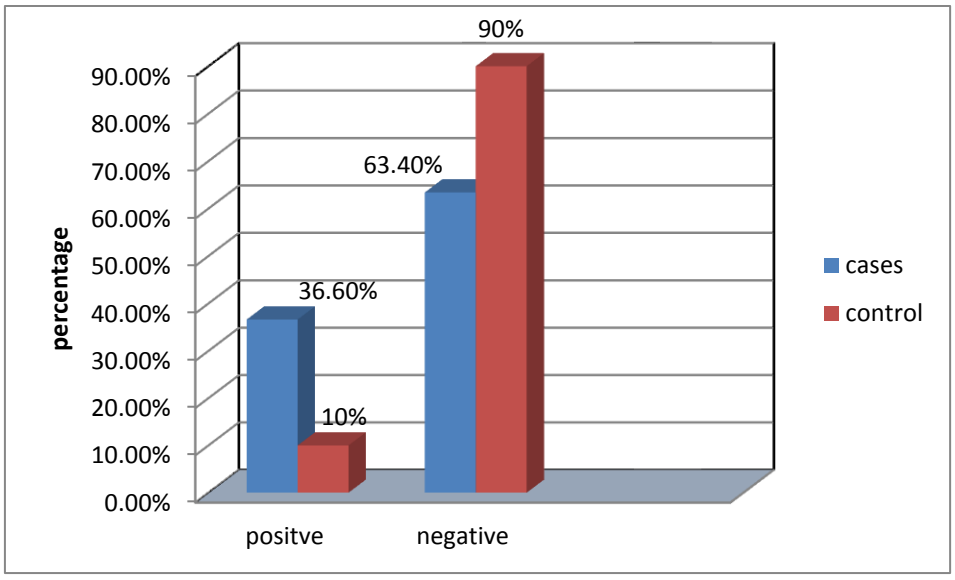

Figure 4: Comparison between asthmatic patients and control groups as regard family history of atopy.

Table 3: Hematological parameters results in the studied groups:

Hematological parameters	Cases	Control	t	P
Hb level (gm/dl)	11.7 ± 1.7	12.6 ± 0.5	3.65	<0.001
Eosinophil ($\times 10^3$/cmm)	3.4 ± 1.5	1.6 ± 0.9	6.45	<0.001
Total W.B.C ($\times 10^3$/cmm)	7.7 ± 2.4	5.4 ± 1.1	5.81	<0.001

This table illustrates that patients showed significant increase in total leucocytic count (p= <0.001) and eosinophilic count (p=<0.001) and a significant decrease in the Hb level (p=<0.001) than the control group .

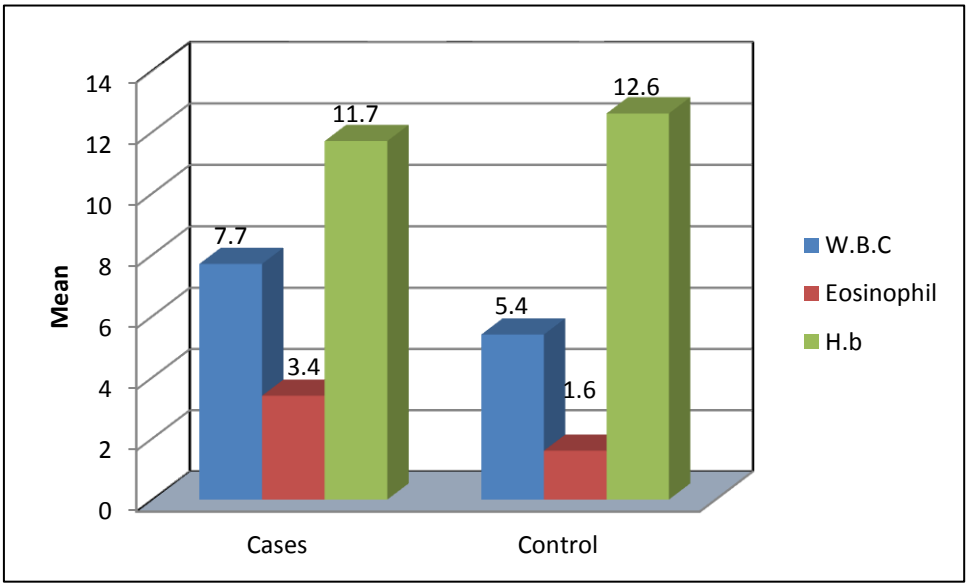

Figure 5:Hematological parameters results in the studied groups.

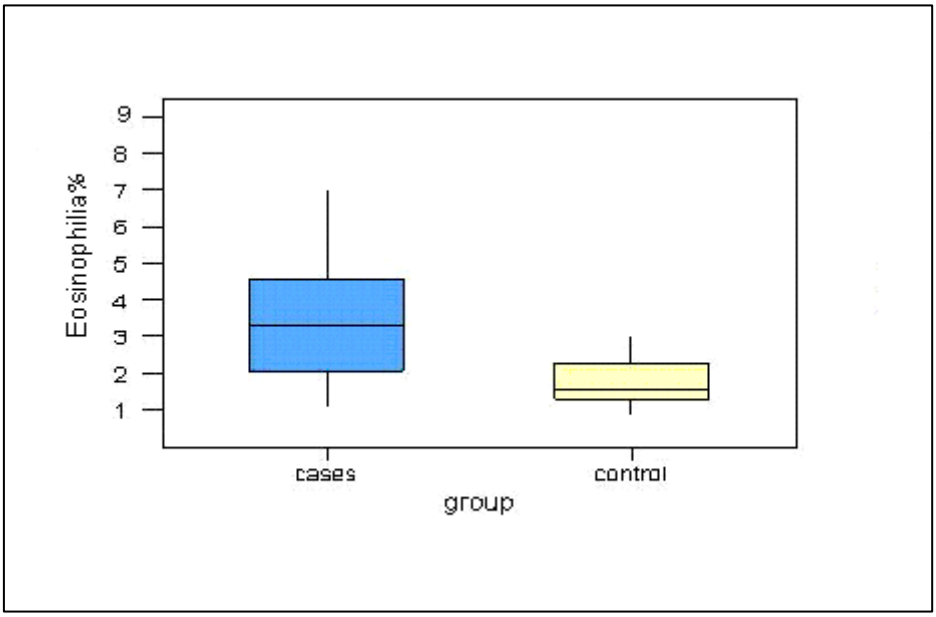

Figure 6:Eosinophilia distribution of the study groups.

Table 4: Mycoplasma pneumoniae IgM results among the study groups:

Study group	Cases		Control		X^2	P
	No.	%	No.	%	0.24	>0.05
IgM Positive	5	8.3	1	5		
IgM Negative	55	91.7	19	95		
Total	60		20			

This table shows that there was no significant difference in the study groups as regard M.P IgM results (P=>0.05). From 60 cases there were 5 positive (8.3%) patients and from 20 control group 1 (5%) give positive result .While From 60 cases there were 55 negative (91.7%) cases and from 20 control group 19 (95%) give negative results.

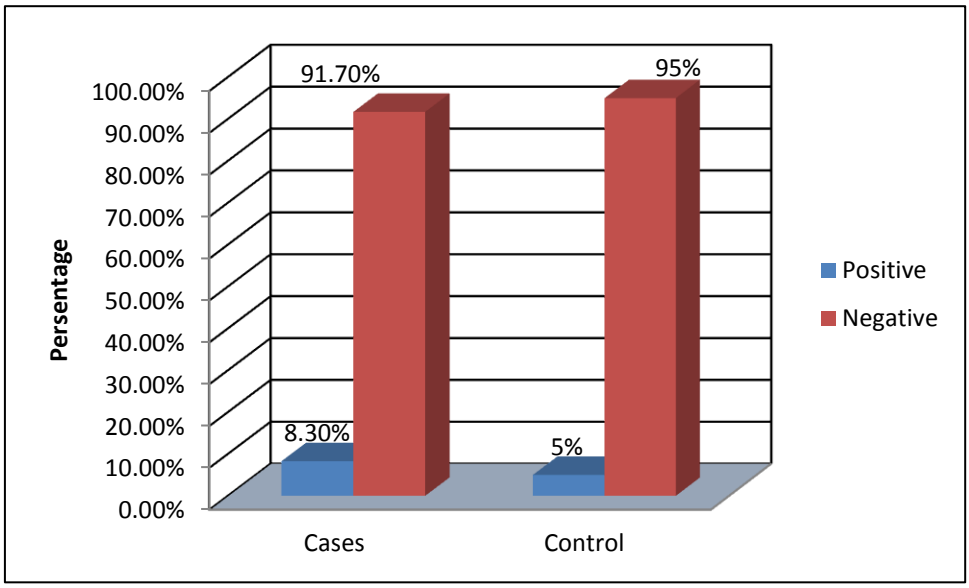

Figure 7: Mycoplasma pneumoniae IgM results among the study groups.

Table 5: Mycoplasma pneumoniae IgG results among the study groups:

Study group	Cases		Control		X^2	P
	No.	%	No.	%	0.419	>0.05
IgG Positive	29	48.3	8	40		
IgG Negative	31	51.7	12	60		
Total	60		20			

This table shows that there was no significant difference in the study groups as regard M.P IgG results (P=>0.05). From 60 cases there were 29 (48.3%) cases give (+ve) results and from 20 control group 8 (40%) give positive results .While From 60 cases there were 31 (51.7%) cases give (-ve) results and from 20 control group 12 (60%) give negative results.

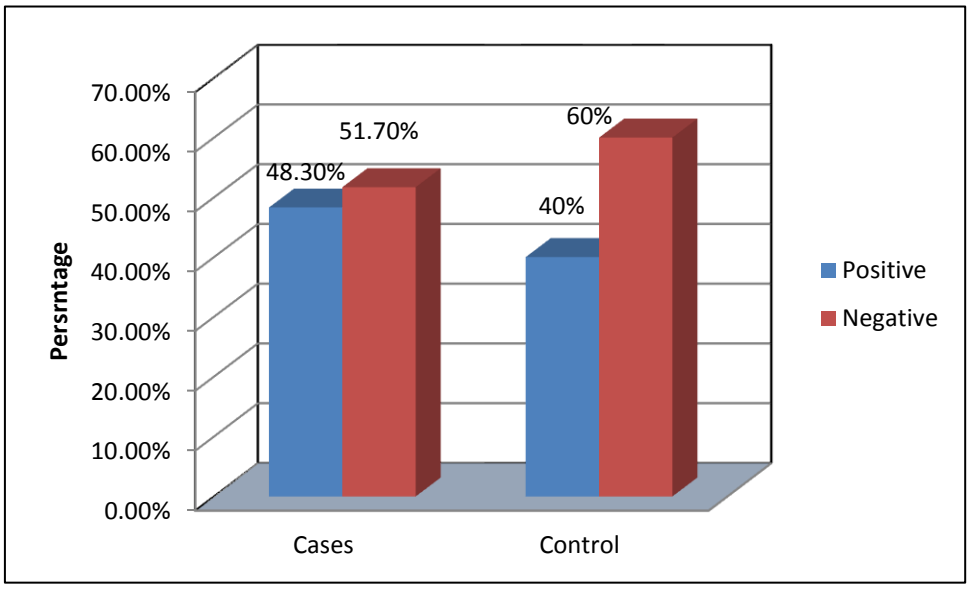

Figure 8:Mycoplasma pneumoniae IgG results among the study groups.

Table 6: The relation between the PCR results and both Mycoplasma pneumoniae IgM and IgG results among the study groups:

Study group	M.P. IgM (+ve)		M.P. IgG (-ve)	
	No.	%	No.	%
PCR +VE	5	100%	3	60%
P.C.R -VE	0		2	40%
Total	5		5	

This table shows the relation between the PCR results for 10 cases 5 positive IgM and 5 highly positive IgG cases. There were (100%) positive PCR results for the IgM cases and only (60%) of the IgG.

Study group / P.C.R	P.C.R (+ve)		P.C.R (-ve)		Total
	No.	%	No.	%	10
	8	80%	2	20%	

There were only 10 cases chosen for PCR 5 with positive M.P IgM and 5 with highly positive M.P IgG results and the P.C.R results were 8 positive (80%) and 2 negative (20%)P.C.R cases. The positive P.C.R were for the all 5 cases (IgM positive) and 3 cases (IgG positive).

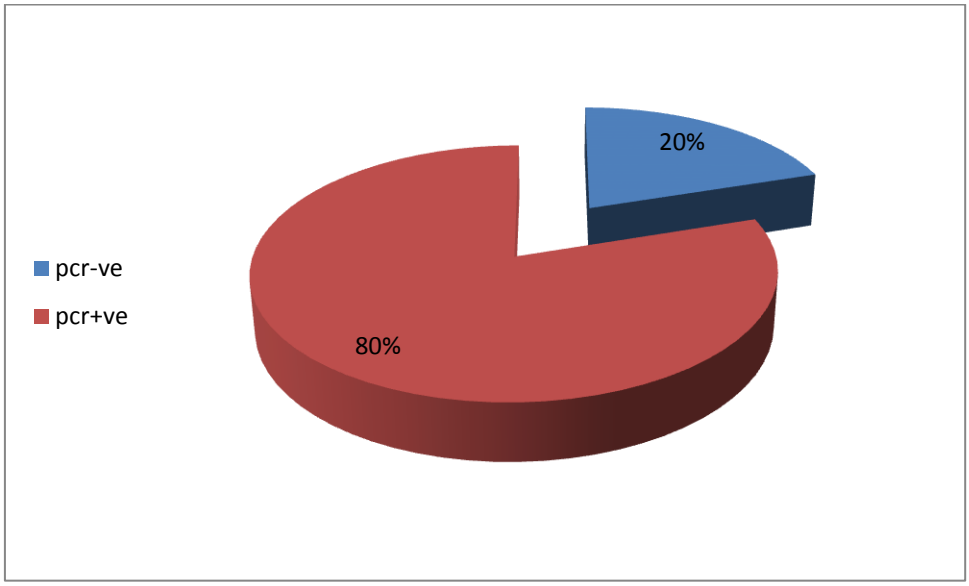

Figure 9: Pie figure of Results of P.C.R to Mycoplasma pneumonia test.

Table 7: Asthma grades in children with positive Mycoplasma pneumoniae IgM and IgG (total no =34).

Study group / Grades of asthma	(+ve) IgM cases		(-ve) IgG cases		Total	
	No.	%	No.	%	No.	%
Moderate	1	20%	20	68.9%	21	61.7%
Severe	4	80%	9	31.1%	15	35.3%
Total	5		29		34	100%

This table shows that 80% of asthmatics with (+ve) IgM to Mycoplasma pneumonia had severe asthma grade and 20% of them had moderate asthma grade. While 31.1% of asthmatics with (+ve) IgG to Mycoplasma pneumonia had severe asthma grade and 68.9% of them had moderate asthma grade.

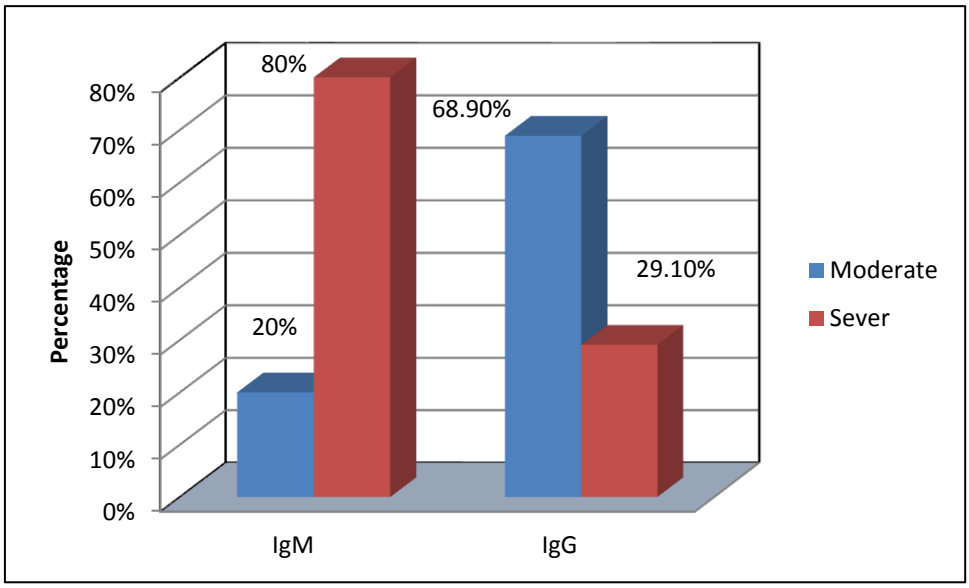

Figure 10: Asthma grades in children with Mycoplasma pneumoniae IgM and IgG positive results.

Table 8:Severity of asthma exacerbations in children according to Mycoplasma pneumoniae IgM results.

severity of asthma	Mild		Moderate		Severe	
	No.	%	No.	%	No.	%
IgM+ ve(no.=5)	0		3	60%	2	40%
IgM-ve (no.=55)	20	36.4%	35	63.6%	0	
Total	20		38		2	

From the 40 cases in asthma attack there were 5 positive M.P. IgM were in this table shows that 2(40%) of them had severe cases and 3 (60%) had moderate cases. While in the 55 negative M.P IgG cases there were no severe cases and 38(63.6%) had moderate asthma and 20(36.4%) mild asthma.

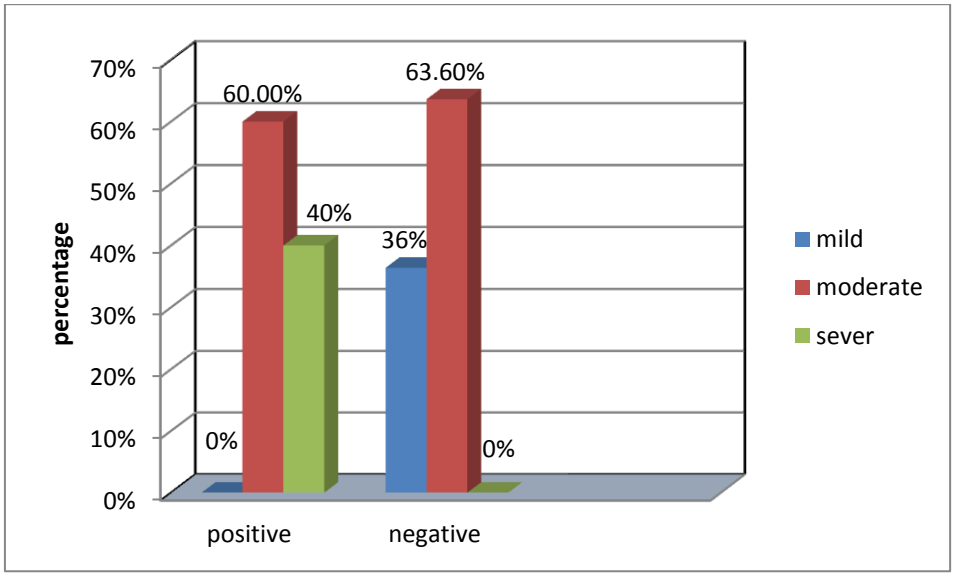

Figure 11: Severity of asthma exacerbations in children according to Mycoplasma pneumoniae IgM results.

Table 9: Comparison between mean of ages of studied children according to both Mycoplasma pneumoniae IgM and IgG results.

Results / Age	+ve	-ve	t	p
	M ± SD	M ±SD		
IgM	6.8 ± 3.7	7.6 ±3.4	0.47	>0.05
IgG	7.7 ± 3.7	7.2 ± 3.1	0.57	>0.05

This table shows that there was no significant difference in ages of patients groups according to M.P IgM and IgG results (p=>0.05).

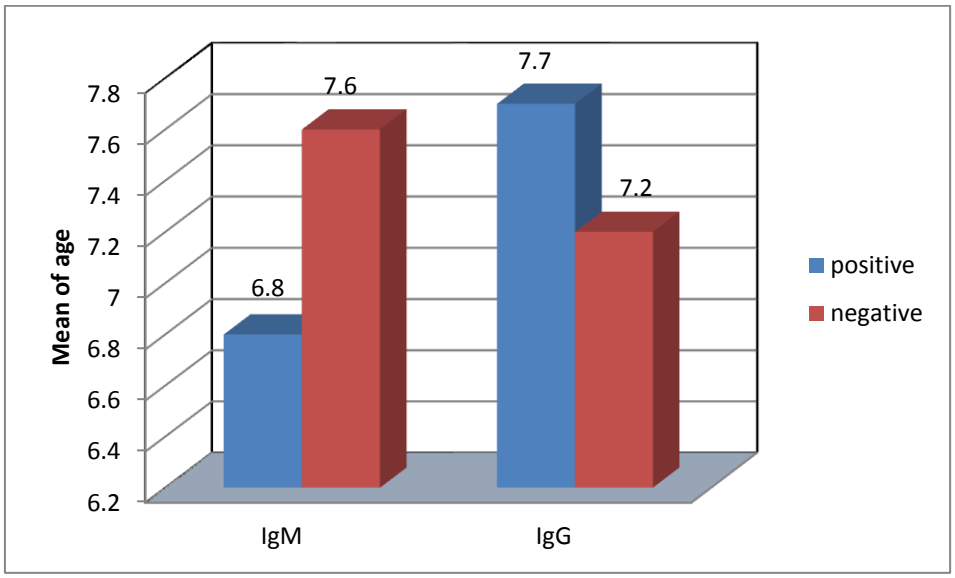

Figure 12: Means of age of studied children according to Mycoplasma pneumoniae IgM and IgG results.

Table 10: Distribution of asthmatic children according to residence and Mycoplasma pneumoniae IgM results.

IgM / residence	+ve N=5		-ve N=55		Total N=60		X^2	P
	No.	%	No.	%	No.	%	0.66	>0.05
Rural	5	100%	40	72.7%	45	75%		
Urban	0	0%	15	27.3%	15	25%		

This table shows that there was no significant difference in residence distribution among M.P IgM (+ve) and (–ve) cases (P=>0.05) as there were 5 (+ve) IgM cases 5(100%) were in rural areas while there were no cases in urban areas .While there were 55(-ve) IgM cases 40(72.7%) were in rural areas while there were 15(27.3%) in urban areas.

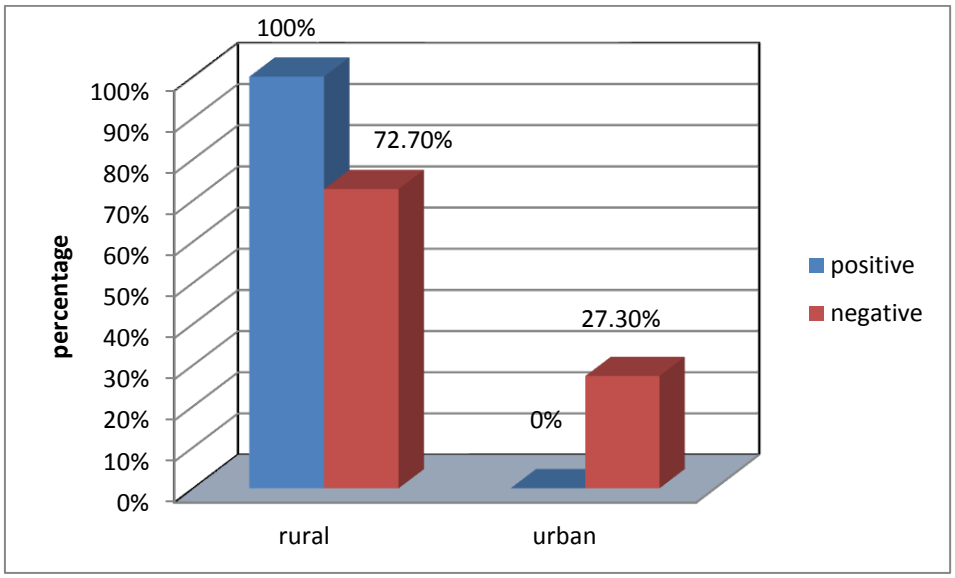

Figure 13: Distribution of asthmatic children according to residence and Mycoplasma pneumoniae IgM results.

Table 11: Distribution of asthmatic children according to residence and Mycoplasma pneumoniae IgG results.

IgG / residence	+ve N=29		-ve N=31		Total N=60		X^2	P
	No.	%	No.	%	No.	%		
Rural	21	72.4%	24	77.4%	45	75%	0.22	>0.05
Urban	8	27.6%	7	22.6%	15	25%		

This table shows that there was no significant difference in residence distribution among M.P IgG (+ve) and (–ve) cases (P=>0.05) as there were 29 (+ve) IgG cases21 (72.4%) were in rural areas while there were 8(27.6%) in urban areas .While there were 31(-ve) IgG cases 24(77.4%) were in rural areas while there were 7(22.6%) in urban areas.

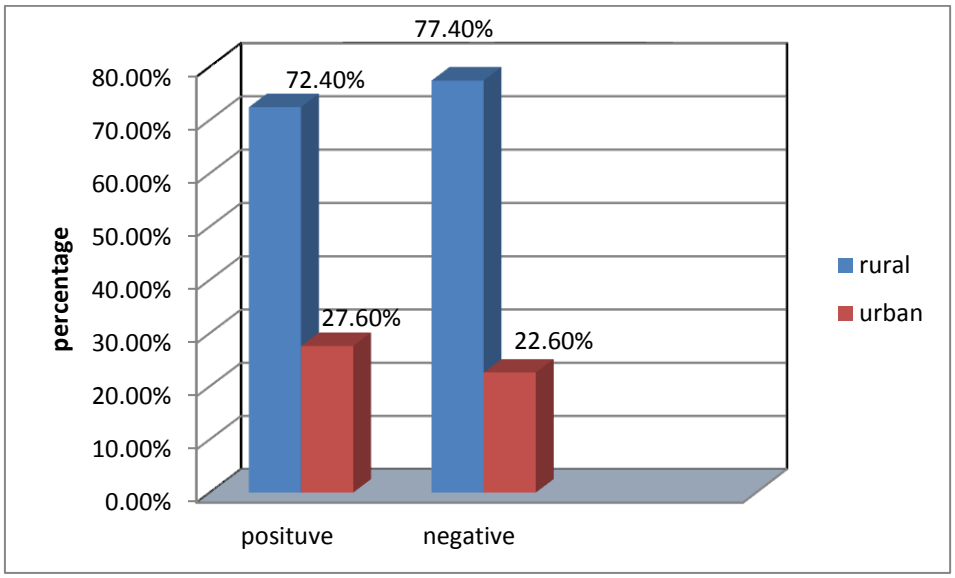

Figure 14: Distribution of asthmatic children according to residence and Mycoplasma pneumoniae IgG results.

Table 12: Distribution of asthmatic children according to sex and Mycoplasma pneumoniae IgM results.

IgM / Sex	+ ve N=5		- ve N=55		Total N=60		X^2	P
	No.	%	No.	%	No.	%	0.055	>0.05
Male	2	40%	31	56.4%	33	55%		
Female	3	60%	24	43.6%	27	45%		

This table shows that there was no significant difference in distribution of sex among M.P IgM (+ve) and (–ve) cases (P=>0.05) .There were 5 (+ve) IgM cases 2(40%) were males and 3 (60%) were females. While there were 55(-ve) IgM cases 31(56.4%) were males and24 (43.6%) were females.

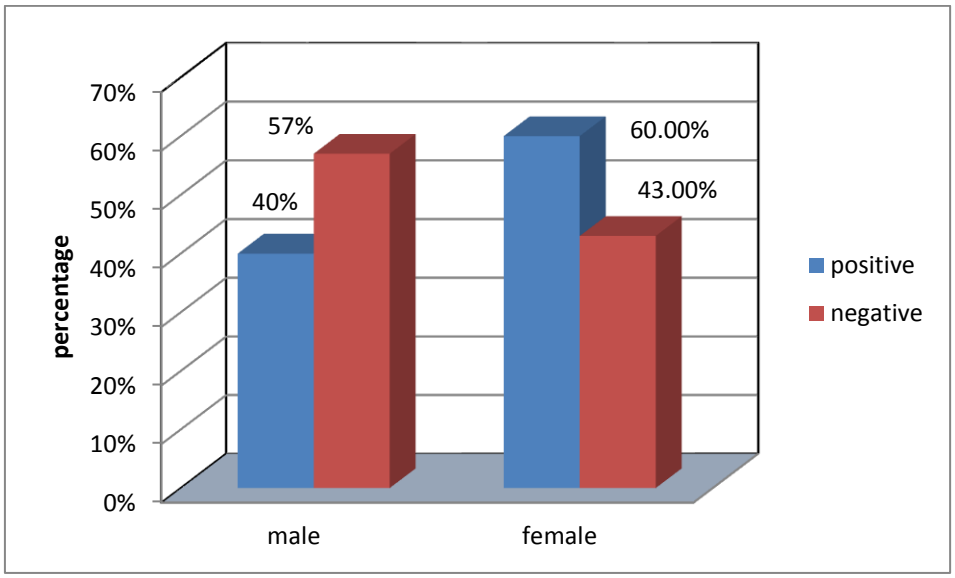

Figure 15: Distribution of asthmatic children according to sex and Mycoplasma pneumoniae IgM results.

Table 13: Distribution of asthmatic children according to sex and Mycoplasma pneumoniae IgG results.

IgG / Sex	+ve N=29		-ve N=31		Total N=60		X^2	P
	No.	%	No.	%	No.	%	0.65	>0.05
Male	18	63%	15	48.4%	33	55%		
Female	11	37%	16	51.6%	27	45%		

This table shows that there was no significant difference in distribution of sex among M.P IgG (+ve) and (–ve) cases (P=>0.05) as there were 29 (+ve) IgG cases, 18(63%) were males and 11(37%) were females. While there were 31(-ve) IgG cases 15(48.4%) were males 16(51.6%) were females.

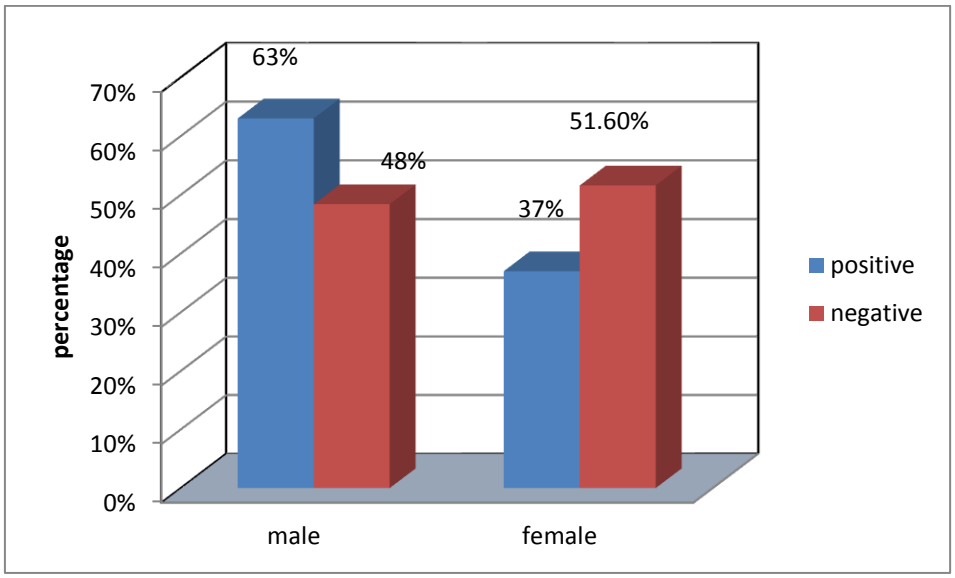

Figure 16: Distribution of asthmatic children according to sex and Mycoplasma pneumoniae IgG results.

Table 14: Comparison between the means of the total leucocytic count of the studied children according toMycoplasma pneumoniae IgM and IgG results.

Results / Leucocytic count (×10³/cm)	IgM(+ve) M ± SD	IgM(-ve) M ±SD	t	p
	10.1 ± 2.4	7.4± 2.2	2.43	<0.05

This table shows that there was a significant difference between means as regard leucocytic count according to IgM results (p=<0.05) as the mean of leucocytic count was (10.1± 2.4) in the (+ve) ones and it was (7.7 ± 2.3) in the (-ve) ones.

Results / Leucocytic count (×10³/cm)	IgG(+ve) M ± SD	IgG(-ve) M ±SD	t	p
	7.6± 2.4	7.7 ± 2.3	0.16	>0.05

While in this table there was no significant difference leucocytic count distribution among IgG results(p=>0.05) as the mean of leucocytic count was (7.6 ± 2.4) in the (+ve) ones and it was (7.7 ± 2.3) in the (-ve) results.

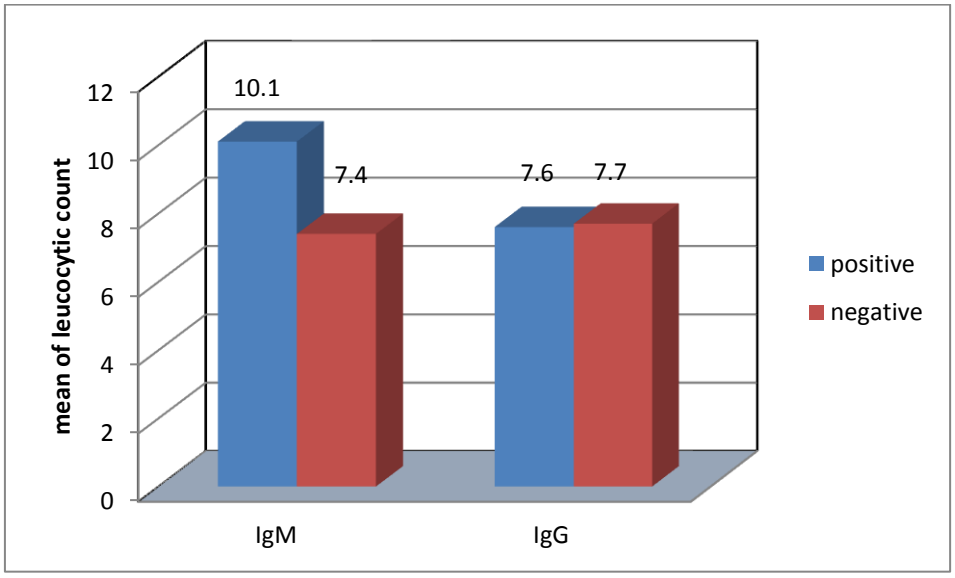

Figure 17: Comparison between the means of the total leucocytic count of the studied children according to Mycoplasma pneumoniae IgM and IgG results.

Table 15: Comparison between means of eosinophilic count of the studied children according to Mycoplasma pneumoniae IgM and IgG results.

Results	IgM(+ve)	IgM(-ve)	t	p
	M ± SD	M ±SD		
Eosinophilic ($\times 10^3$/cm)	3.2 ± 1.1	3.4± 1.5	0.34	>0.05

This table shows that there was no significant difference in Eosinophilic count distribution among IgM results (p=>0.05) as the mean of eosinophilic count was (3.2 ± 1.1) in the IgM (+ve) patients and it was (3.4 ± 1.5) in the IgM (-ve) patients.

Results	IgG(+ve)	IgG(-ve)	t	p
	M ± SD	M ±SD		
Eosinophilic ($\times 10^3$/cm)	3.4± 1.4	3.4 ± 1.6	0.33	>0.05

This table shows that there was no significant difference in Eosinophilic count distribution among IgM results (p=>0.05) as the mean of eosinophilic count was (3.4± 1.4) in the IgG (+ve) and it was (3.4 ± 1.6) in the IgG (-ve) patients.

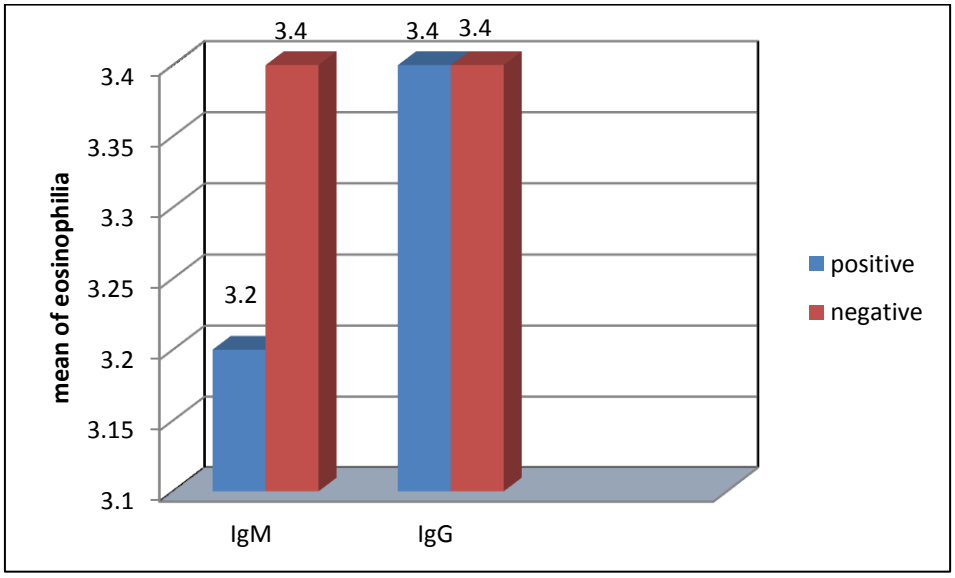

Figure 18: Comparison between the means of eosinophilic count of the studied children according to Mycoplasma pneumoniae IgM and IgG results.

Table 16: Comparison between mean of Hb level of the studied children according to Mycoplasma pneumoniae IgM and IgG results.

Results / Hb level (gm/dl)	IgM(+ve) M ± SD	IgM(-ve) M ±SD	t	p
	11.6 ± 1.8	12.2± 0.2	2.32	<0.05

This table shows that there was a significant difference as regard HB level distribution among IgM results (p=<0.05) as the mean of Hb level was (11.6 ± 1.8) in the (+ve) ones and it was (12.2± 0.2) in the (-ve) ones.

Results / Hb level (gm/dl)	IgG(+ve) M ± SD	IgG(-ve) M ±SD	t	p
	11.2 ± 1.9	12.1 ± 1.4	2.1	<0.05

This table shows that there was a significant difference as regard HB level distribution among IgG results (p=<0.05) as the mean of Hb level was (11.2± 1.9) in the (+ve) ones and it was (12.1 ± 1.4) in the (-ve) results.

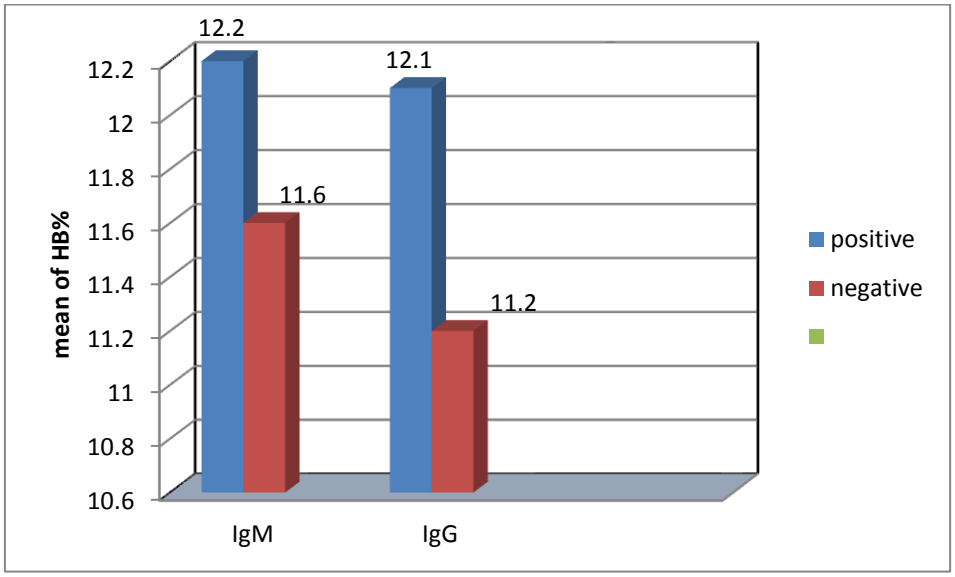

Figure 19: Comparison between mean of Hb level of the studied children according to Mycoplasma pneumoniae IgM and IgG results.