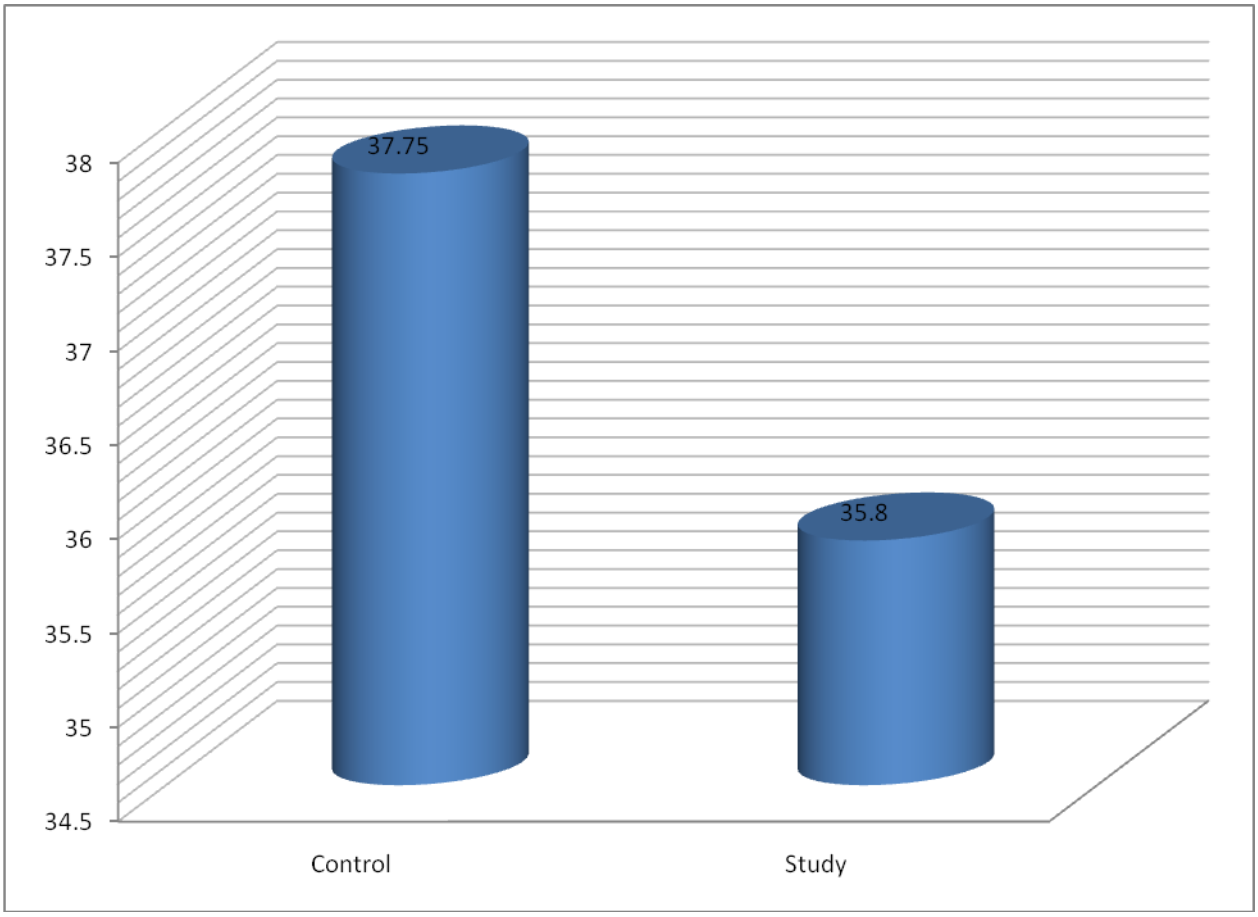
Results

Table (6):statistical Comparison between the studied groups as regard to gestational age.

	Gestational age	
	study "group I"	**control "group II"**
Range	**28-38**	**30-41**
Mean	**35.80**	**36.75**
± SD	**3.79**	**2.713**
t. test	**1.3**	
p. value	>0.05	

The table shows that there is no statistical significant difference between group I and group II as regard gestational age.



Figure(3): Comparison between the studied groups as regard to gestational age.

Table (7): statistical Comparison between the studied groups as regard to sex distribution.

		Sex		
		Male	**Female**	**Total**
Control	N	13	7	20
	%	65.0%	35.0%	100.0%
Case	N	18	22	40
	%	45.0%	55.0%	100.0%
Total	N	31	29	60
	%	51.7%	48.3%	100.0%
Chi-Square	X^2	1.4		
	P-value	>0.05		

The table shows that there is no statistical significant difference between males and females in the study group in comparison with the control group.

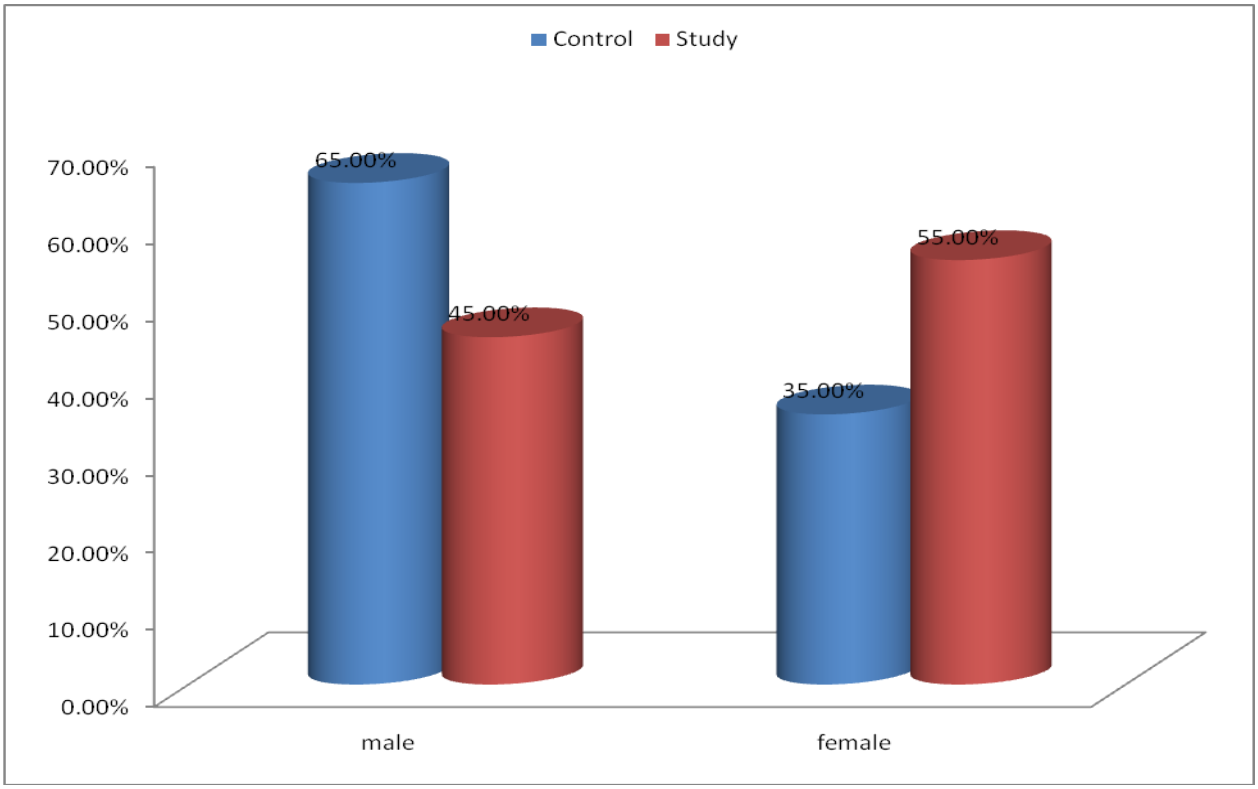


Figure (4): Comparison between the studied groups between males and females.

Table (8): statistical Comparison between the studied groups as regard to birth weight.

	Birth weight	
	study "group I"	**control"group II"**
Range	0.75-3.5	2.35-3.2
Mean	2.54	2.76
± SD	.704	.238
t. test	1.8	
p. value	>0.05	

The table shows that there is no statistical significant difference between group I and group II as regard birth weight.

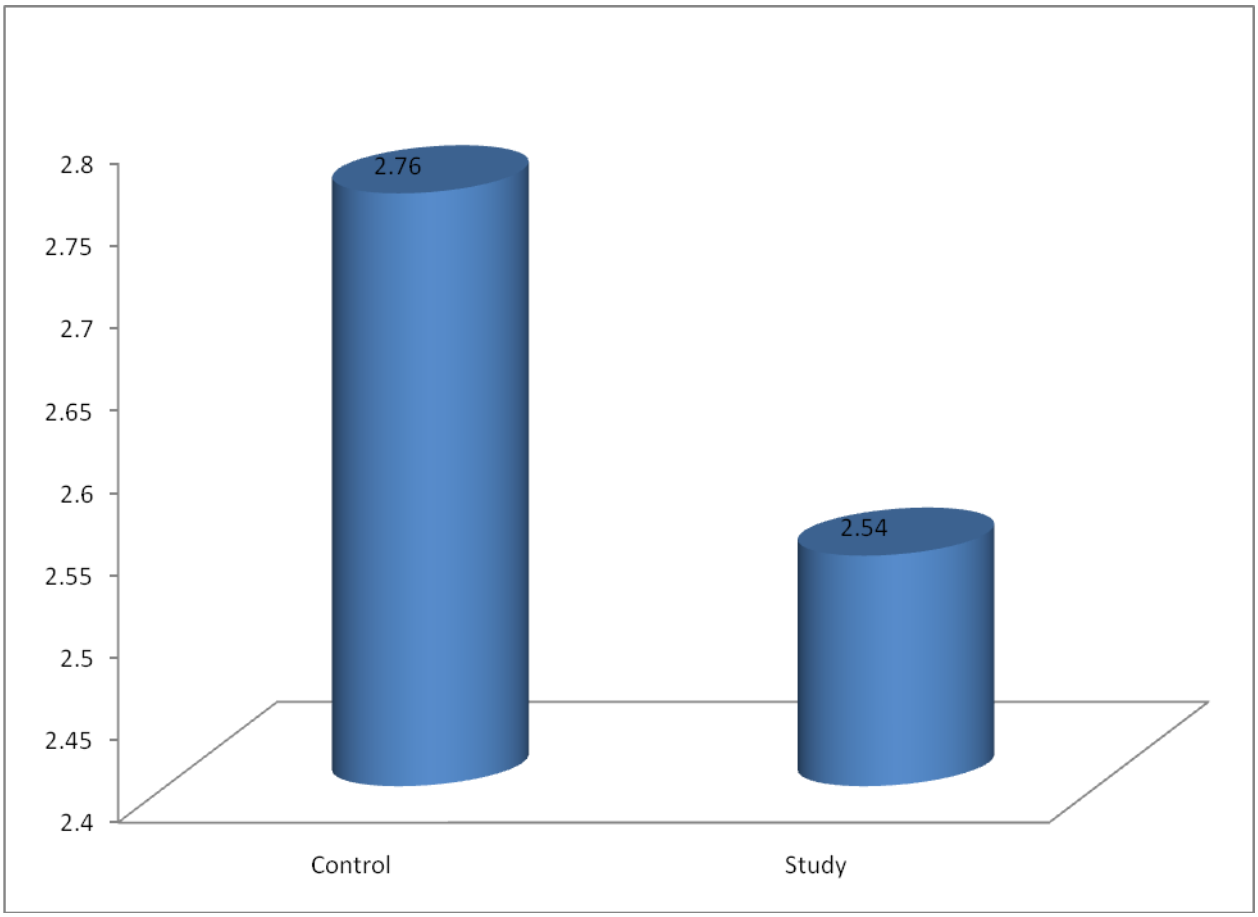


Figure (5): Comparison between the studied groups as regard to birth weight.

Table (9):statistical Comparison between the studied groups as regard to mode of delivery.

		Mode of delivery		
		LSCS	**NSVD**	**Total**
Control	N	10	10	20
	%	50.0%	50.0%	100.0%
Case	N	29	11	40
	%	72.5%	27.5%	100.0%
Total	N	39	21	60
	%	65.0%	35.0%	100.0%
Chi-Square	X^2	2.1		
	P-value	>0.05		

The table shows that there is no statistical significant difference between the study groups in comparison with the control group as regard mode of delivery.

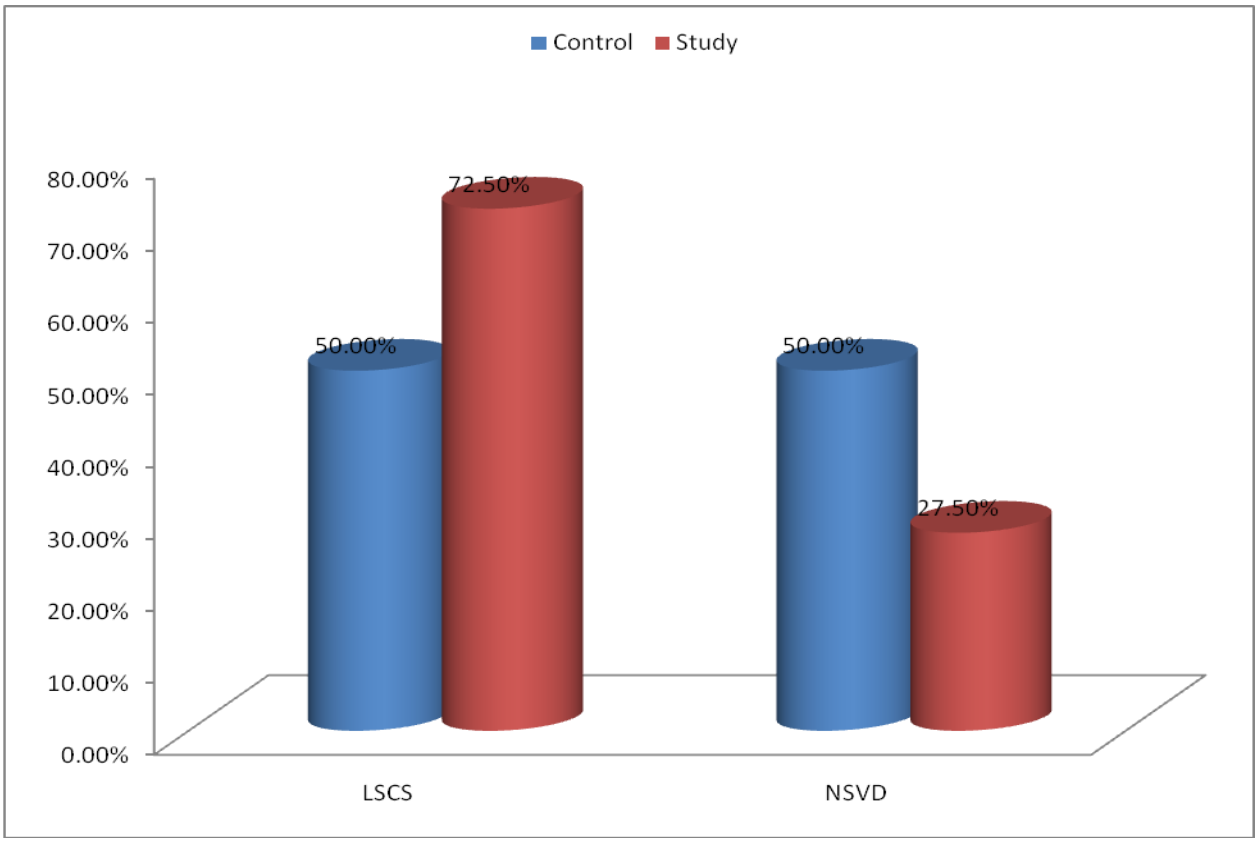


Figure (6): Comparison between the studied groups as regard mode of delivery.

Table (10): statistical Comparison between the studied groups as regard to NICU length of stay.

	NICU length of stay	
	study	**control**
Range	5-30	1-3
Mean	9.95	2.25
± SD	6.921	0.910
t. test	6.9	
p. value	<0.001	

The table shows that there is highly statistical significant difference between NICU lengths of stay in the study group in comparison with the control group.

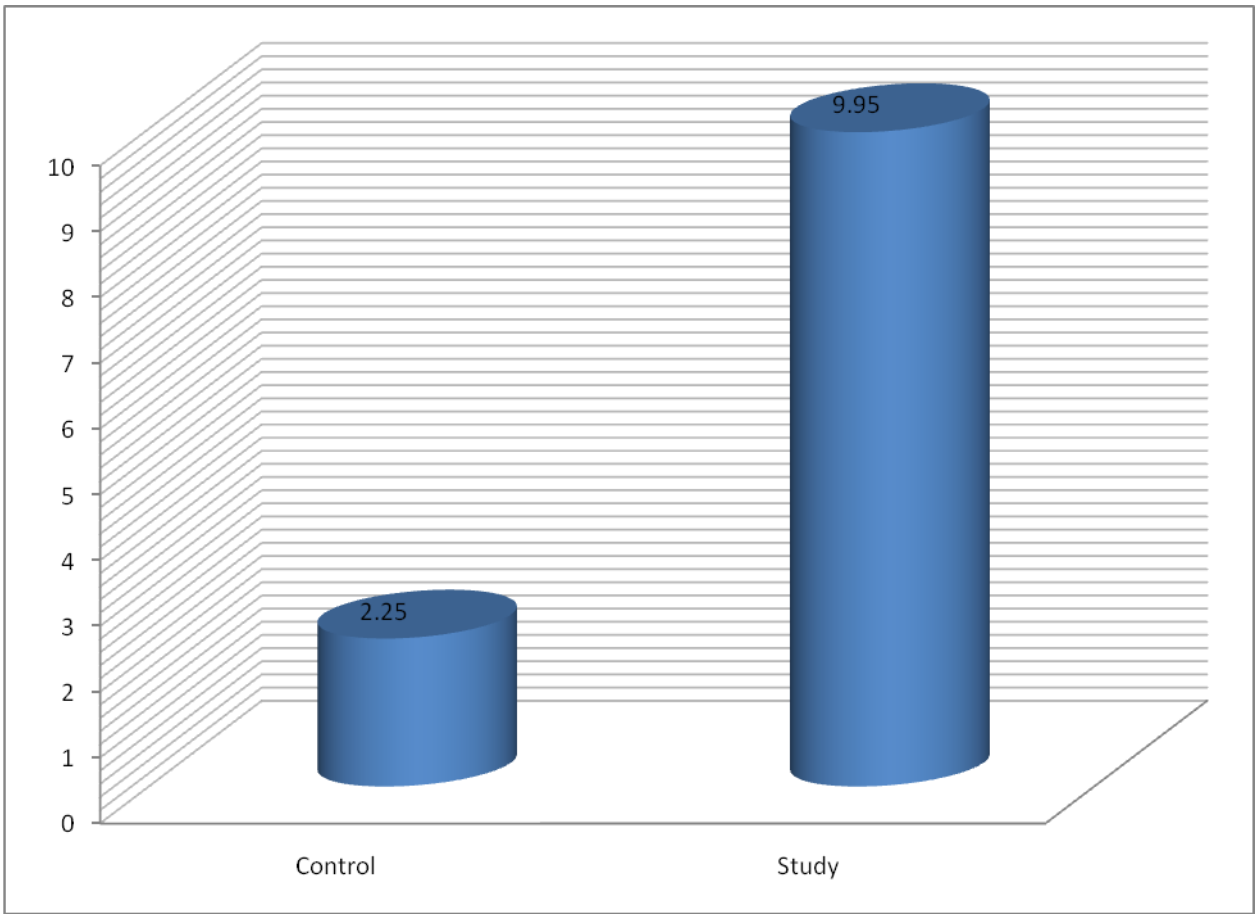


Figure (7): Comparison between the studied groups as regard NICU length of stay.

Table (11): statistical Comparison between the studied groups as regard to Apgar score at 1 min.

	Apgar score At 1 min	
	study	**control**
Range	1-9	6-9
Mean	4.92	7.9
± SD	2.41	1.1
t. test	10.7	
p. value	< 0.001	

The table shows that there is highly statistical significant difference between Apgar score at 1 min in the study group in comparison with the control group.

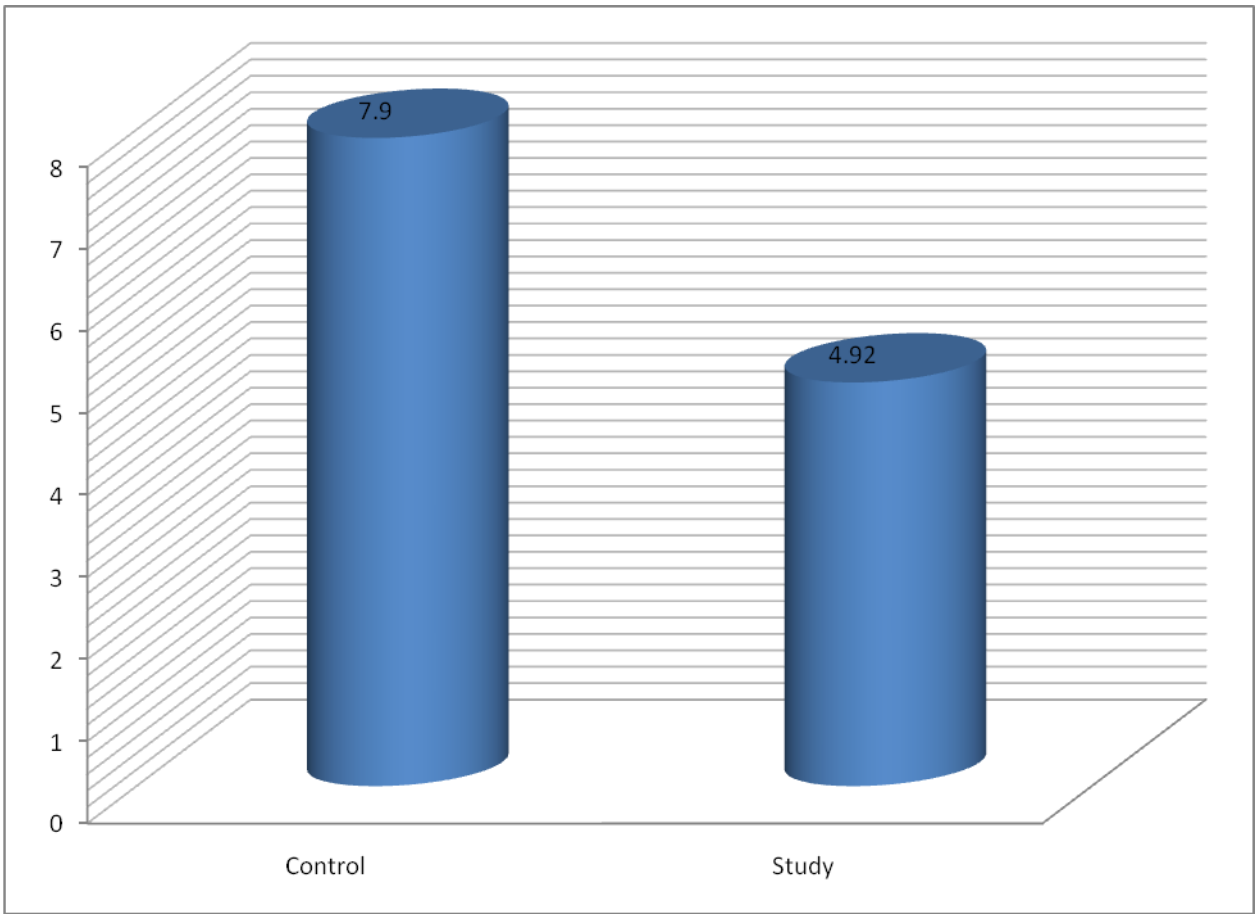


Figure (8): Comparison between the studied groups as regard to Apgar score at 1 min.

Table (12): statistical Comparison between the studied groups as regard to Apgar score at 5 min.

	Apgar score At 5 min	
	study	**control**
Range	5-10	9-10
Mean	7.98	9.8
± SD	1.40	0.1
t. test	9.2	
p. value	< 0.001	

The table shows that there is highly statistical significant difference between Apgar score at 5 min in the study group in comparison with the control group.

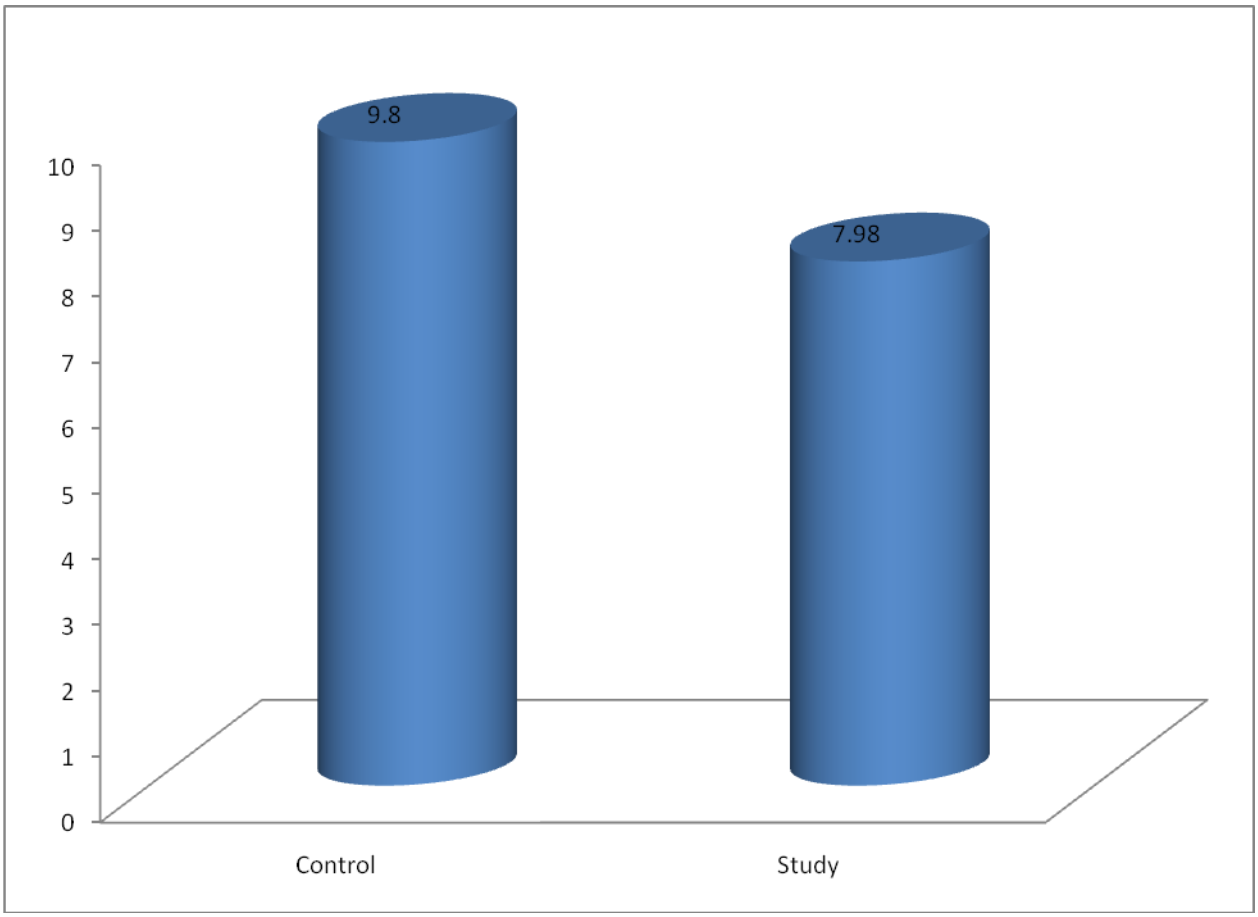


Figure (9): Comparison between the studied groups as regard to Apgar score at 5 min.

Table (13): statistical Comparison between cases and control groups as regard to complete blood picture "CBC" parameters.

	N	Range	Mean	Std. Deviation	t	P
HB gm/dl	**Cases (40)**	**6.5-16.5**	**12.64**	**2.2885**	**1.2**	**>0.05**
	Control(20)	**10-17.5**	**13.355**	**2.1486**		
RBC $10^6/mm^3$	**Cases (40)**	**2.2-4.8**	**3.744**	**.7458**	**2.6**	**<0.05**
	Control(20)	**3.3-6.3**	**4.294**	**.7960**		
L.C $10^3/mm^3$	**Cases (40)**	**1.4-33.9**	**14.85**	**8.558**	**0.5**	**>0.05**
	Control(20)	**9-21**	**15.59**	**3.365**		
PLC $10^3/mm^3$	**Cases (40)**	**30-450**	**126.30**	**96.656**	**6.9**	**<0.001**
	Control(20)	**185-441**	**300.55**	**80.772**		

The tables show that there is no statistical significant difference between the study group and the control group as regards HB, RBCs and LC.

While there is highly statistical significant difference in PLC.

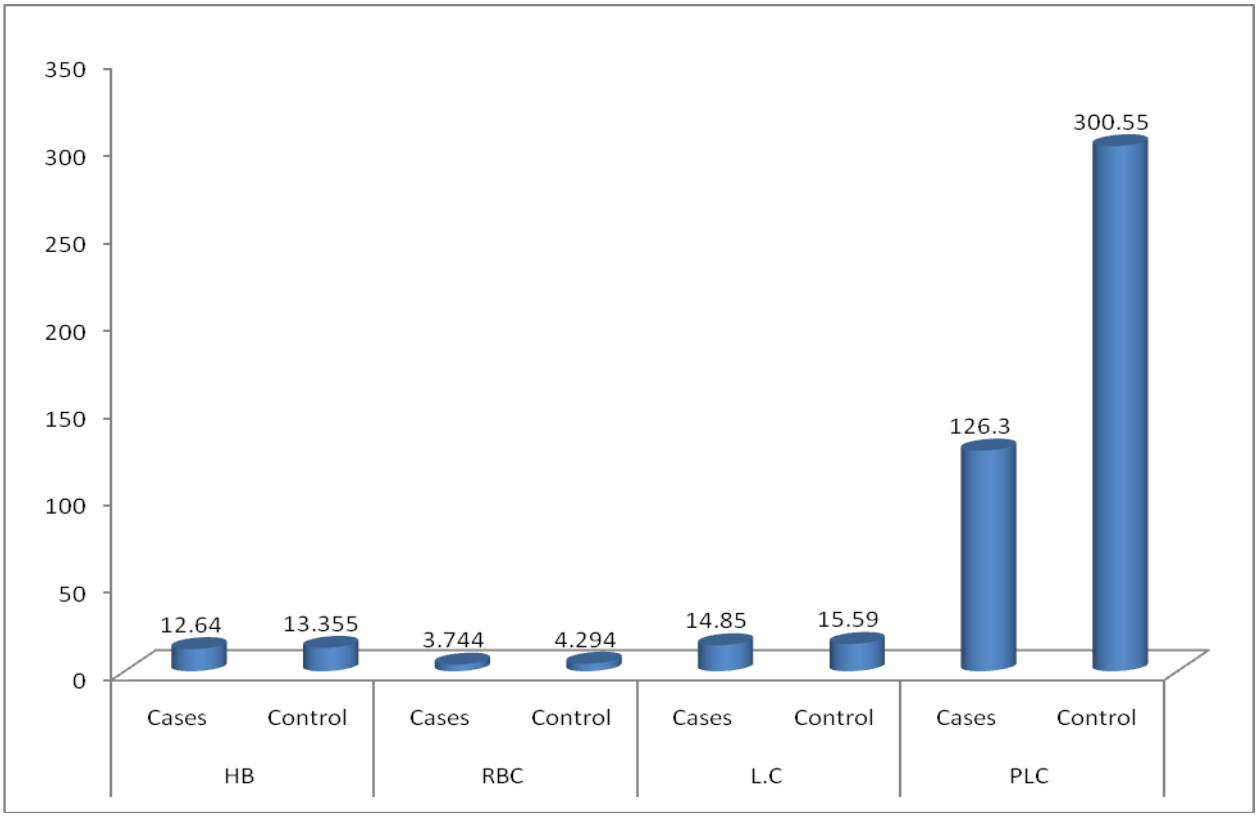


Figure (10): Comparison between cases and control groups as regard to CBC parameters.

Table (14): statistical Comparison between cases and control groups as regard to complete blood picture "CBC" parameters.

	N	Range	Mean	Std. Deviation	t	P
Immature PMN (x109/L)	Cases (40)	0-7.9	2.680	1.8538	2.6	<0.05
	Control(20)	0.09-3.3	1.744	.9239		
Mature PMN (x109/L)	Cases (40)	0.2-18.6	8.719	4.9753	0.3	>0.05
	Control(20)	0.5-13.5	9.102	3.8594		
I/T ratio	Cases (40)	0-0.3	0.2015	.08448	4.1	<0.001
	Control(20)	0.01-0.2	0.1150	.05826		
I/M ratio	Cases (40)	0-0.61	0.2482	.13851	1.8	>0.05
	Control(20)	0.1-0.28	0.2020	.05764		

The tables show that there is no statistical significant difference between the study group and the control group as regards Mature PMN and I/M ratio.

While there is statistical significant difference as regards Immature PMN and I/T ratio

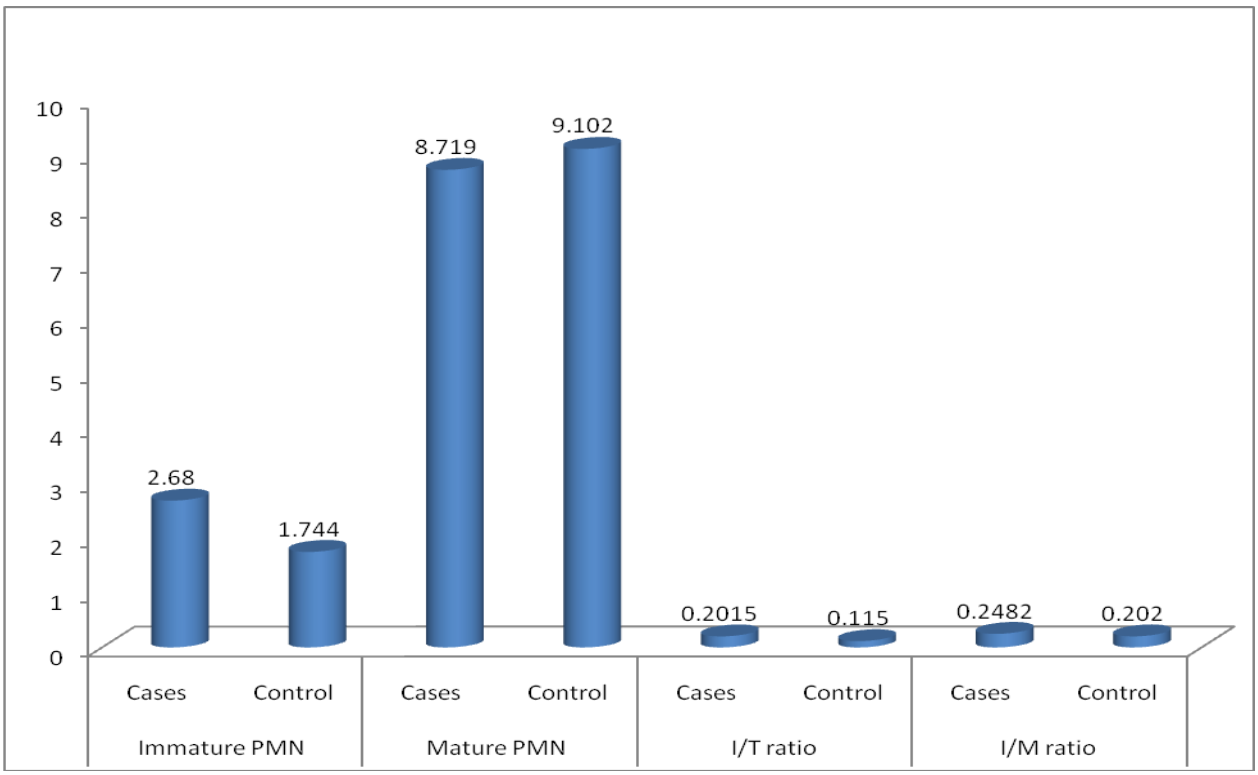


Figure (11): Comparison between cases and control groups as regard to CBC parameters.

Table (15): statistical Comparison between cases and control groups as regard to HSS.

		N	Mean	Std. Deviation	t	P
HSS	Cases	40	3.6000	0.56324	14.9	<0.001
	Control	20	0..8000	0.76777		

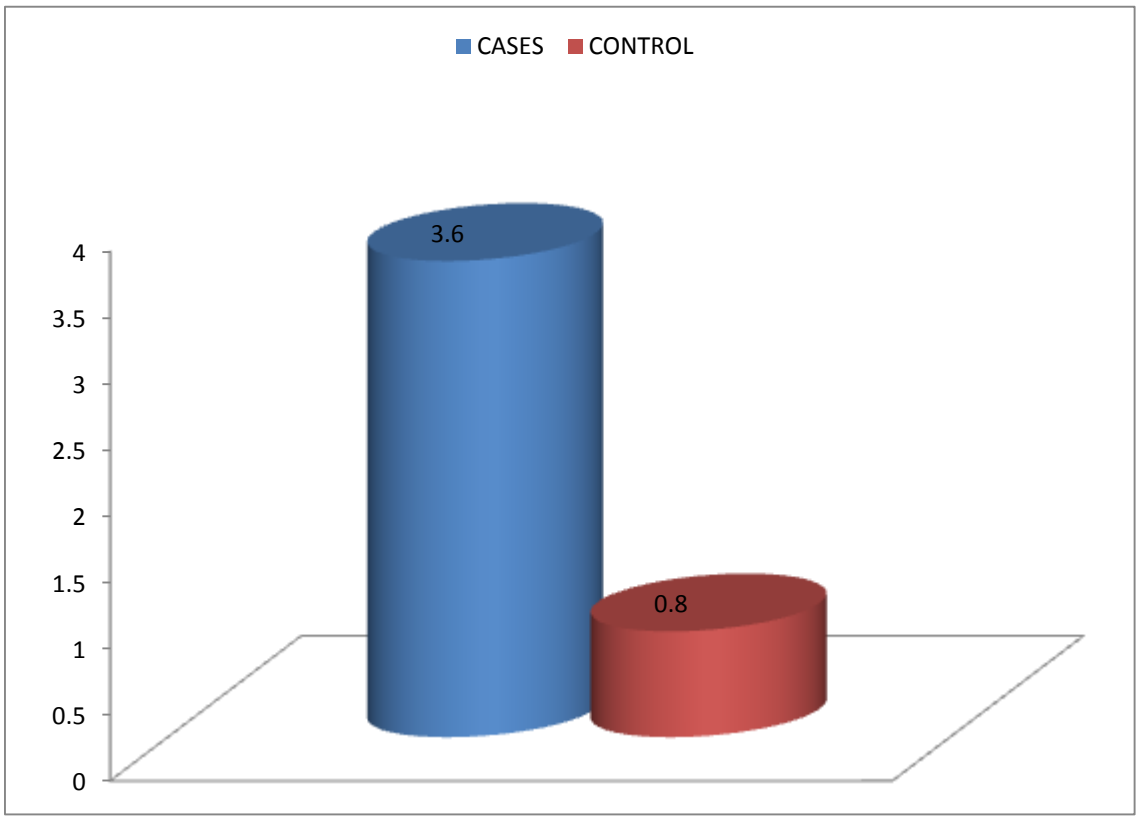


Figure (12): Comparison between cases and control groups as regard to HSS.

Table (16): statistical Comparison between CRP level of the studied groups.

	CRP (mg/L)	
	study	**control**
Range	12-96	0-6
Mean	37.92	2.95
± SD	32.601	1.905
t. test	12.8	
p. value	<0.001	

The table shows that there is statistical significant difference between CRP levels in group I and group II.

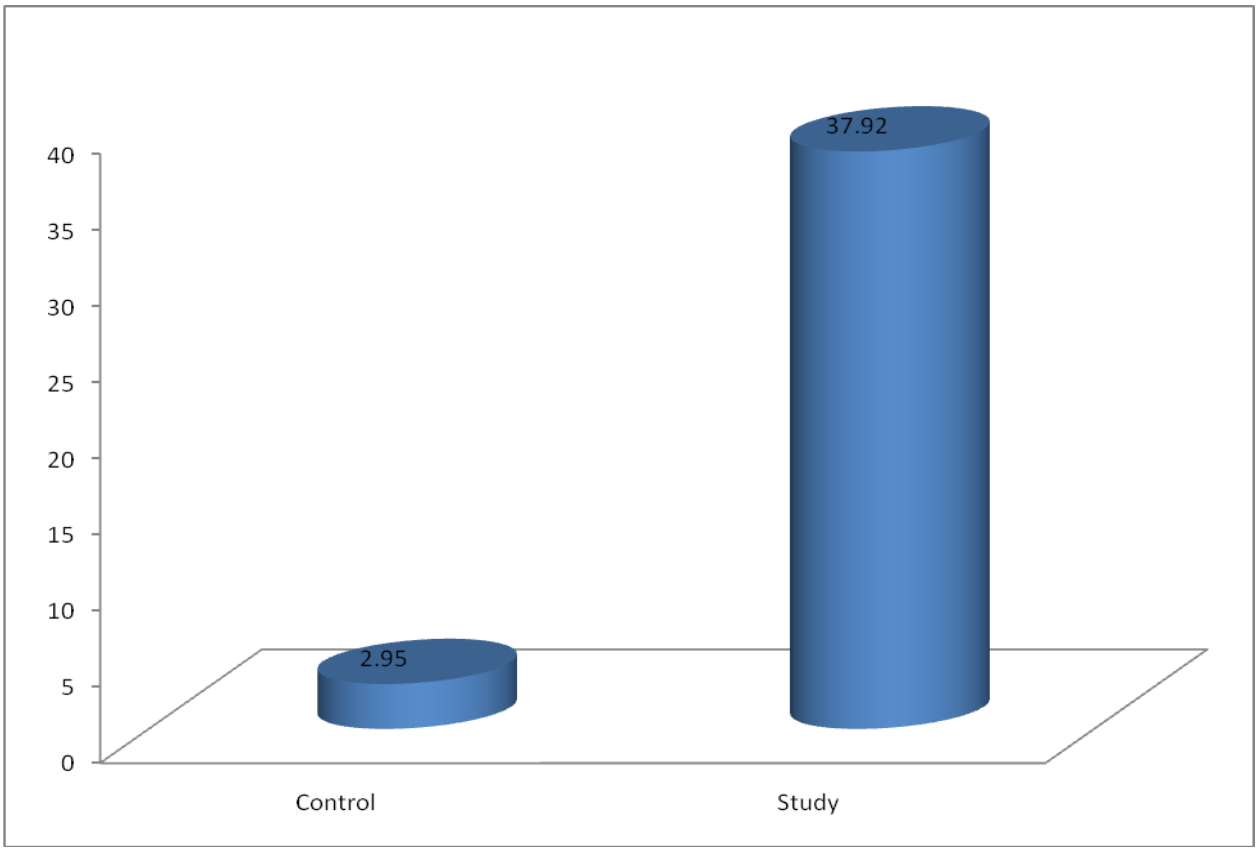


Figure (13): Comparison between CRP levels of the studied groups.

Table (17): cases according to Blood culture results

	No.	%
No growth	**13**	**32.5**
Klebsiella	**12**	**30.0**
Staph. Aureu	**10**	**25**
E. coli	**2**	**5.0**
Acinetobacter	**2**	**5.0**
Listeria	**1**	**2.5**
Total	**40**	**100.0**

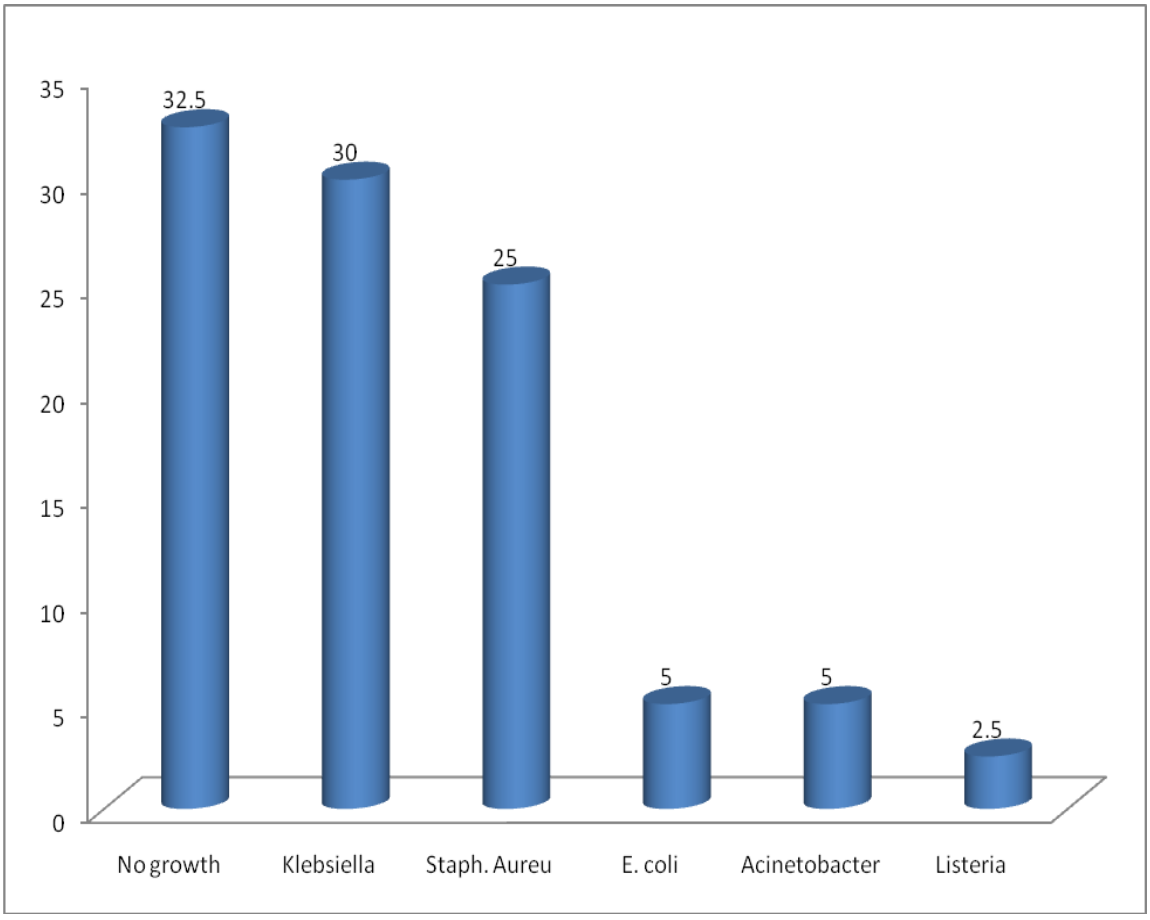


Figure (14): Study group according to isolated organisms

Table (18): statistical Comparison between Human Neutrophil Lipocalin level at birth & at day 3 of the studied groups.

	HNL			
	At birth		Day 3	
	Control	Study	Control	Study
Range	62.6-102.6	146.5-597.5	62.8-102.4	17.3-403.7
Mean	82.985	359.402	83.015	197.725
± SD	12.867	135.819	12.812	98.567
t. test	15.9		7.3	
p. value	<0.001		<0.001	

The table shows that there is statistical significant difference between HNL levels in control and study groups.

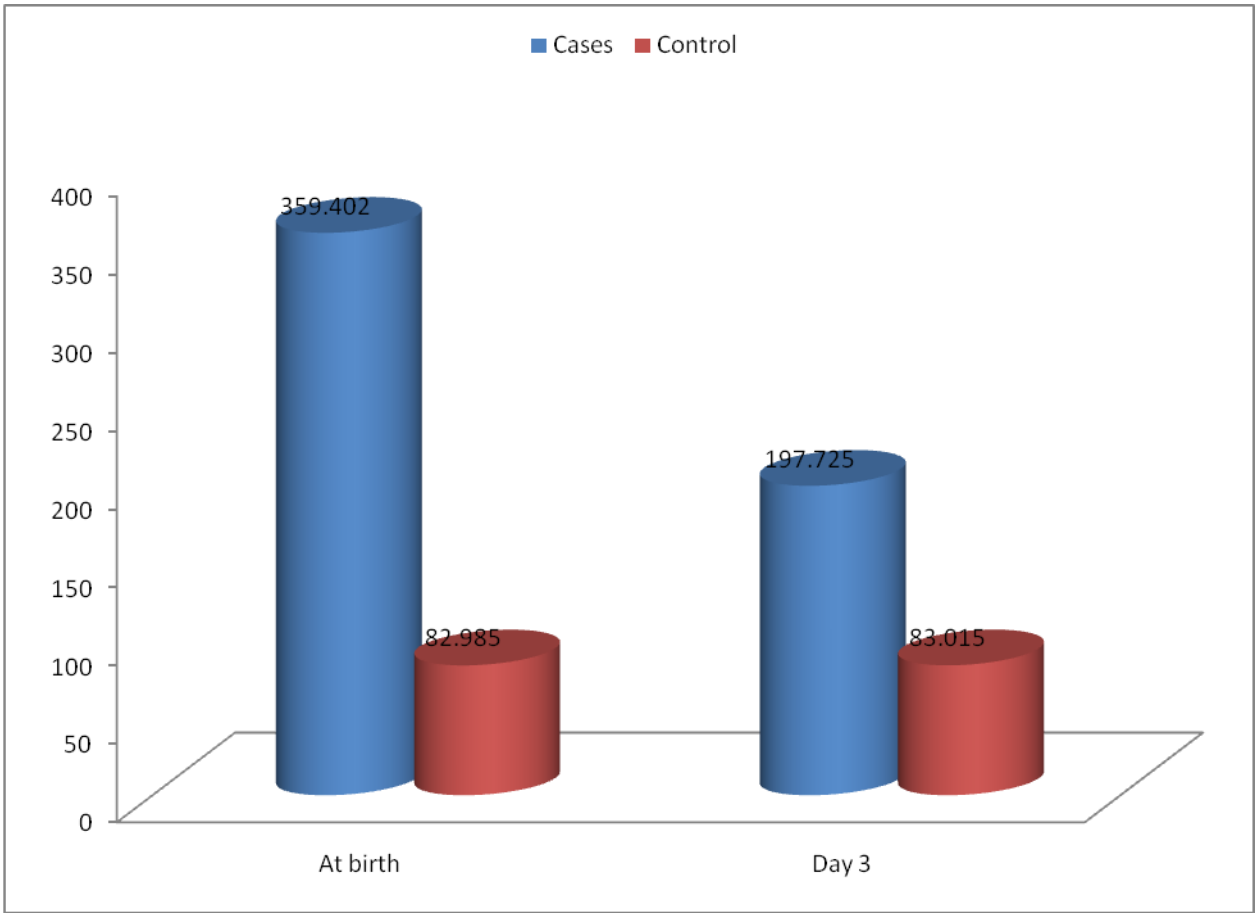


Figure (15): Comparison between HNL levels of the studied groups.

Table (19): statistical Comparison between Human Neutrophil Lipocalin level at birth & at day 3 of the proven and non proven sepsis.

	HNL			
	At birth		Day 3	
	Proven	non proven	proven	non proven
Mean	**394.207**	**393.515**	**204.870**	**182.885**
± SD	**139.3761**	**78.9360**	**103.2314**	**90.1812**
t. test	**0.1**		**0.7**	
p. value	**>0.05**		**>0.05**	

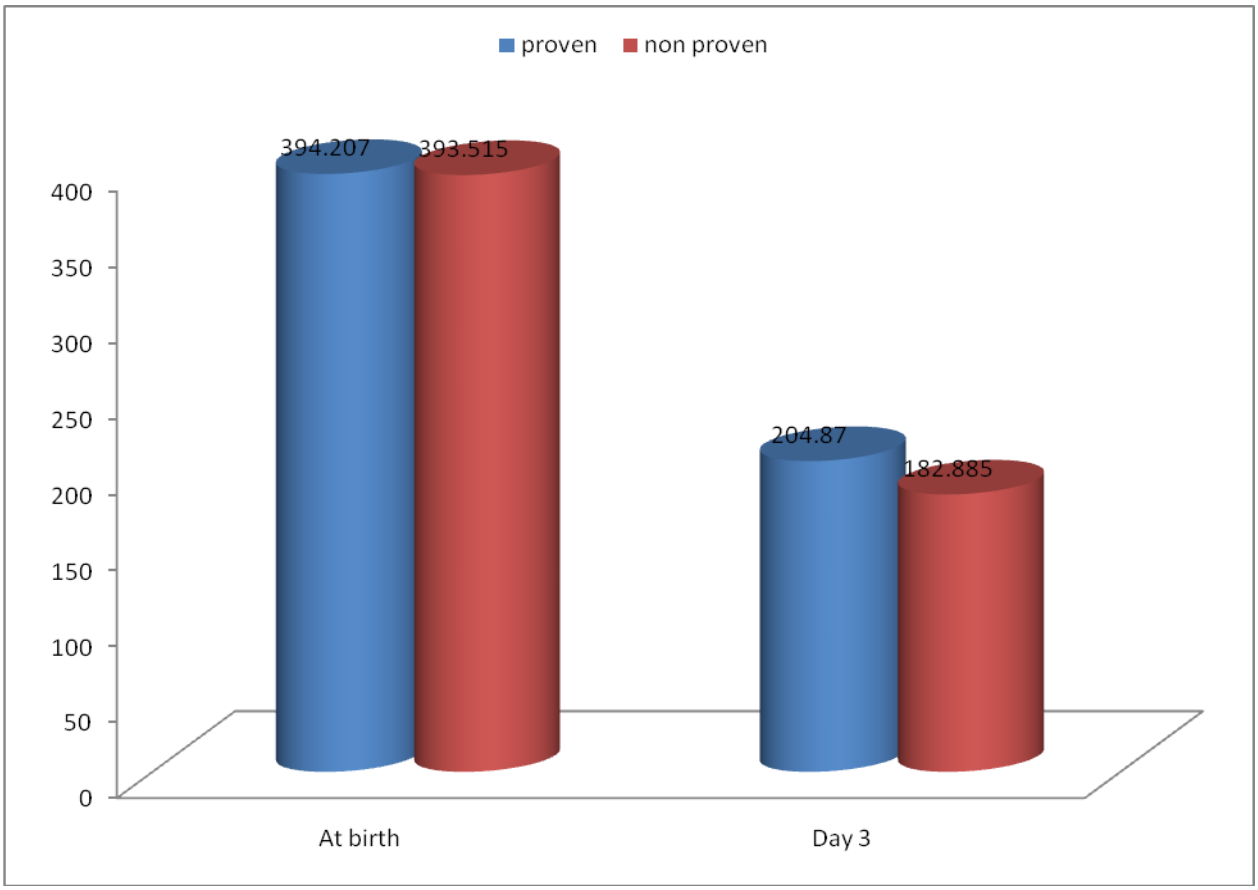


Figure (16): Comparison between HNL levels of proven and non proven sepsis

Table (20): statistical Comparison between Human Neutrophil Lipocalin level at birth & at day 3 of gram-ve and gram+ve organisms.

		Mean	Std. Deviation	t	p
HNL at birth	**gram -ve**	**371.563**	**139.4410**	**0.6**	**>0.05**
	gram +ve	**334.027**	**159.6736**		
Day 3 HNL	**gram -ve**	**199.856**	**95.0559**	**0.3**	**>0.05**
	gram +ve	**212.164**	**118.5550**		

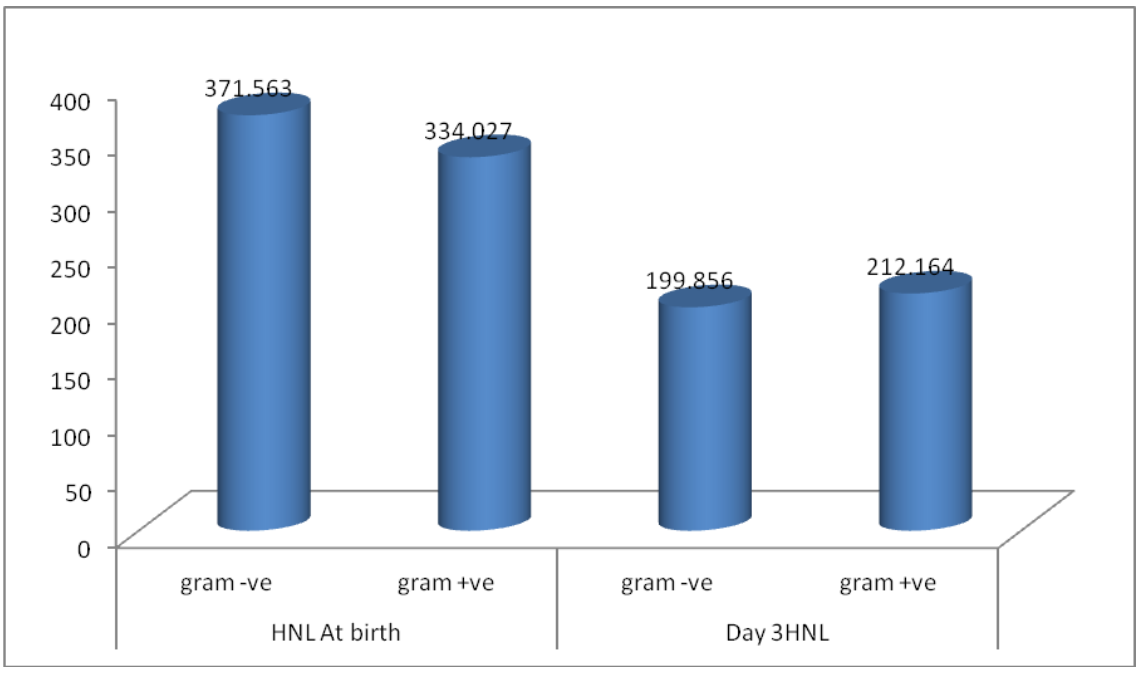


figure (17): Comparison between HNL level at birth & at day 3 of gram-ve and gram+ve organisms.

Table (21): Correlation between HNL levels with different variables.

Variables	r	P-value
Gestational age	**-0.63**	**<0.05**
Birth weight	**-0.4**	**<0.05**
Apgar score at 1 min.	**-0.073**	**>0.05**
Apgar score at 5 min.	**0.174**	**>0.05**

The table shows statistical significant correlation of HNL level with gestational age, and birth weight but no statistical significant correlation with Apgar score.

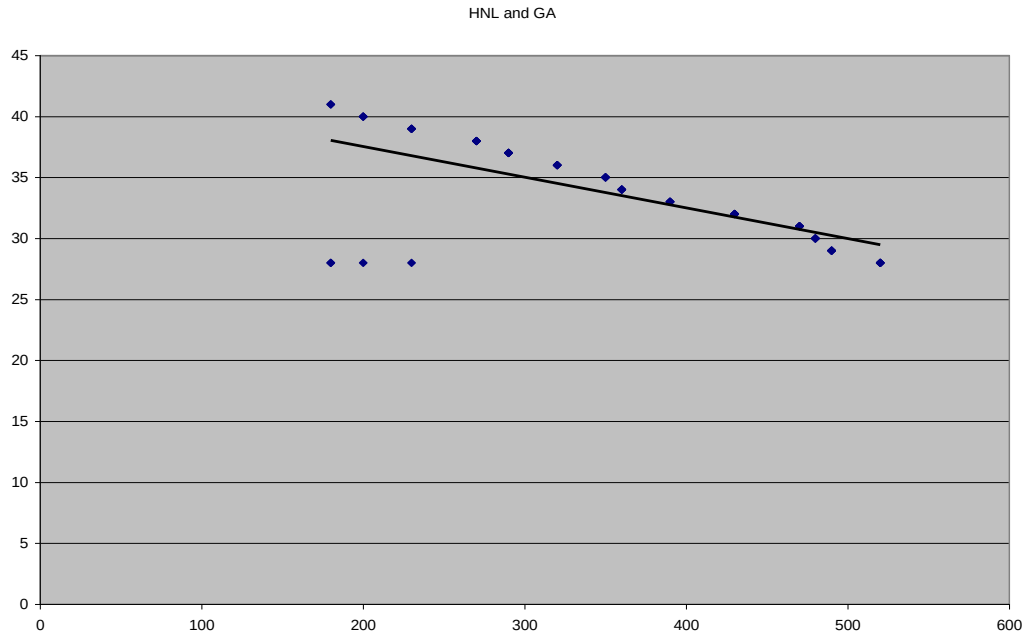


Figure (18): Shows statistical significant correlation of HNL levels with the gestational age in the studied groups.

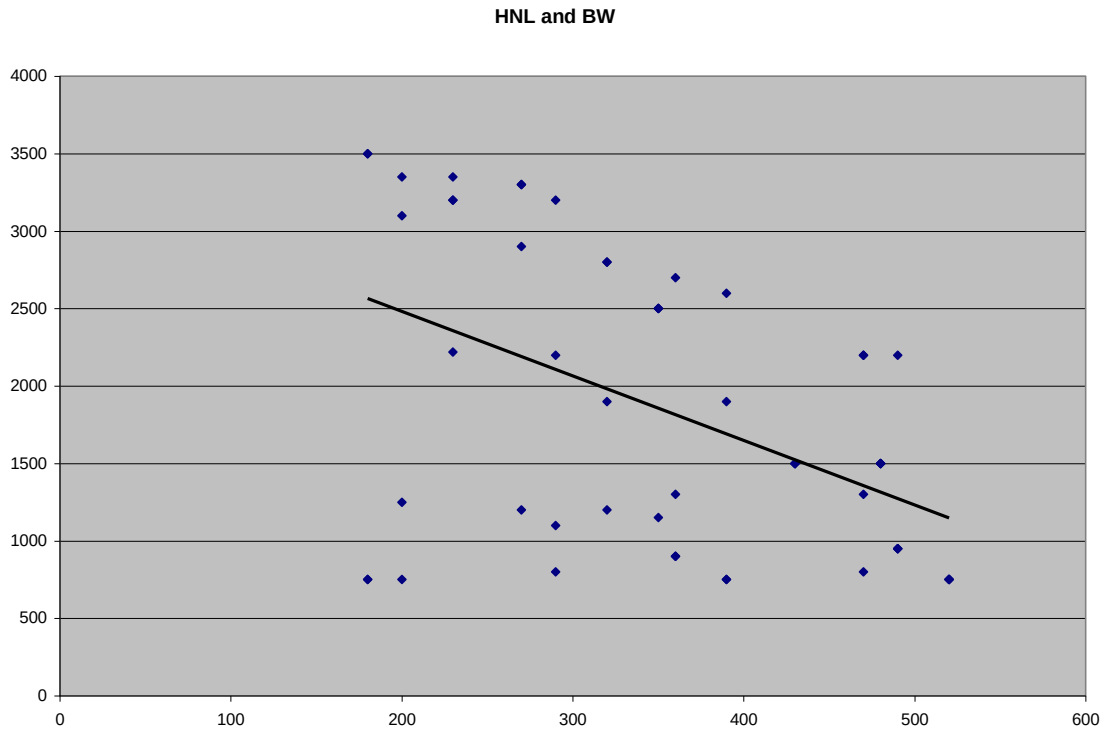
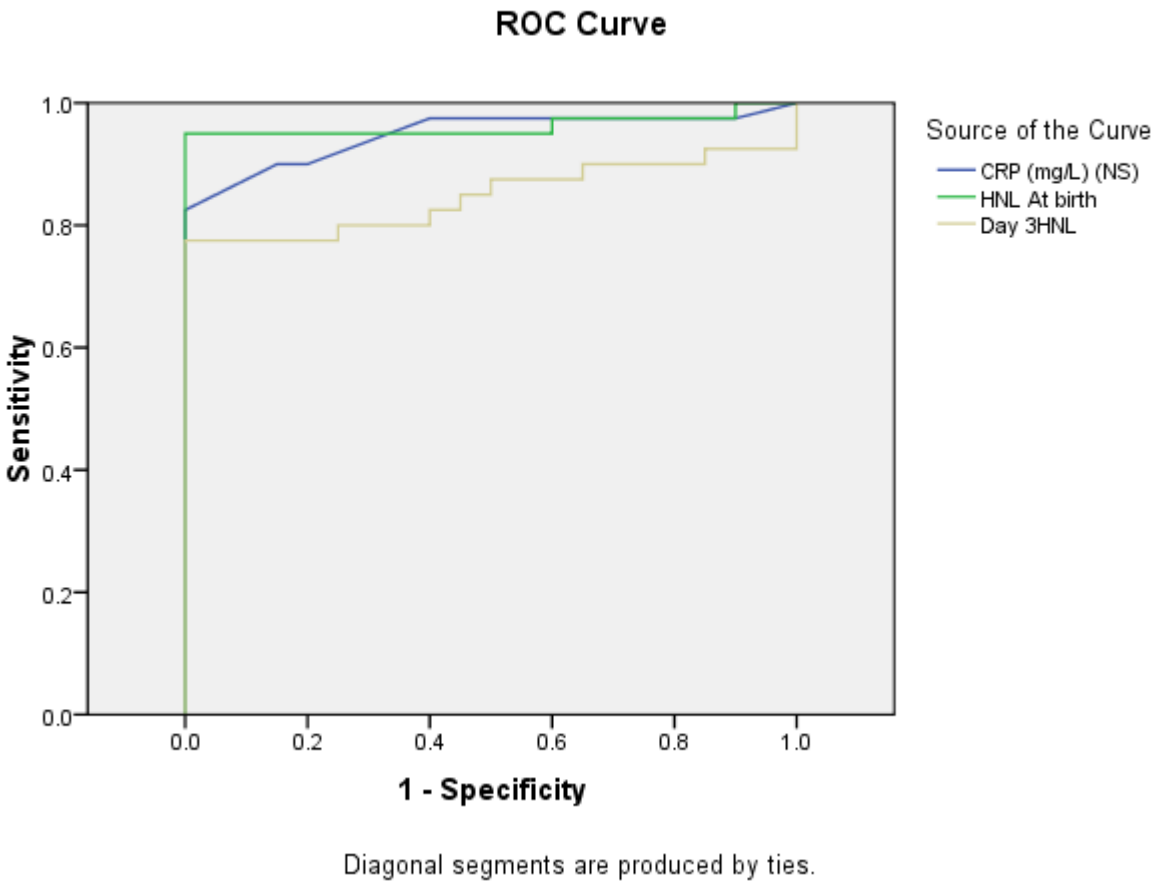


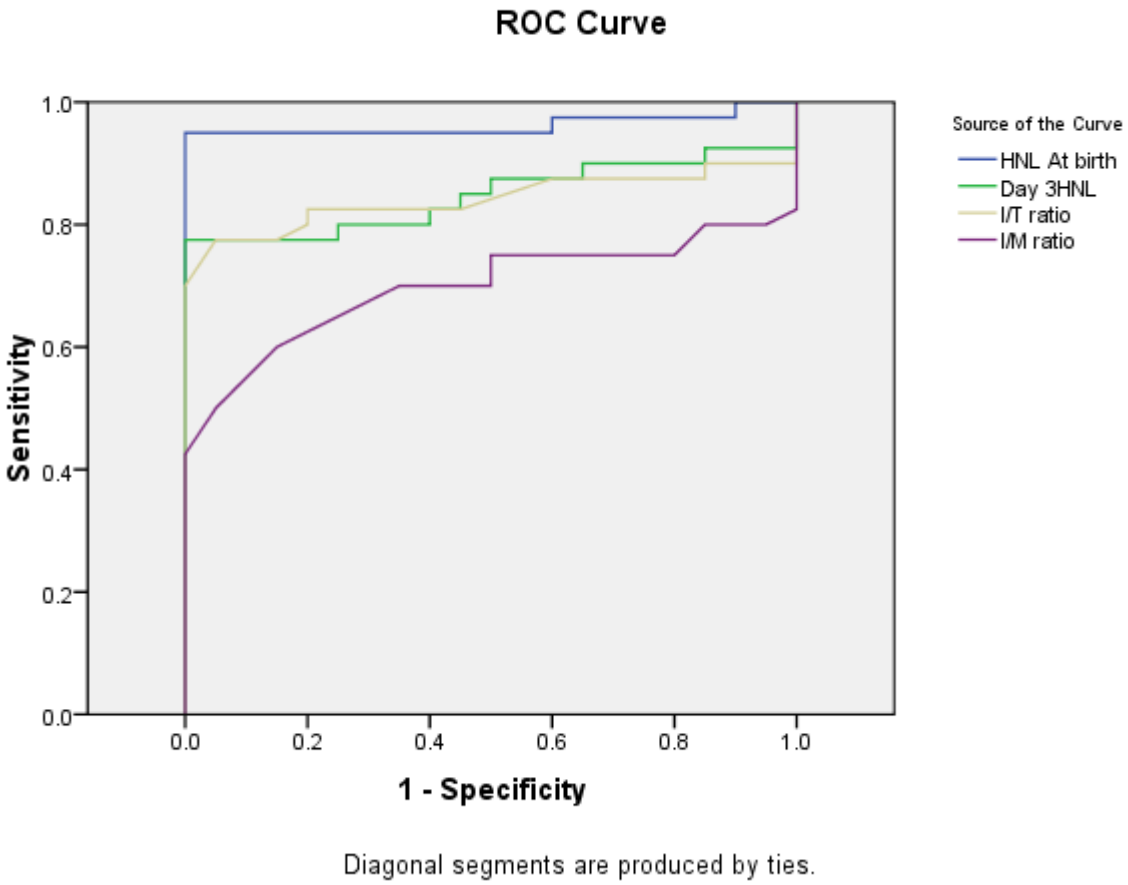
Figure (19): Shows statistical significant correlation of HNL levels with the birth weight in the studied groups.

Area Under the Curve	
Test Result Variable(s)	**Area**
CRP (mg/L)	**.948**
HNL At birth	**.962**
Day 3 HNL	**.848**



The more the area under the curve the better the test

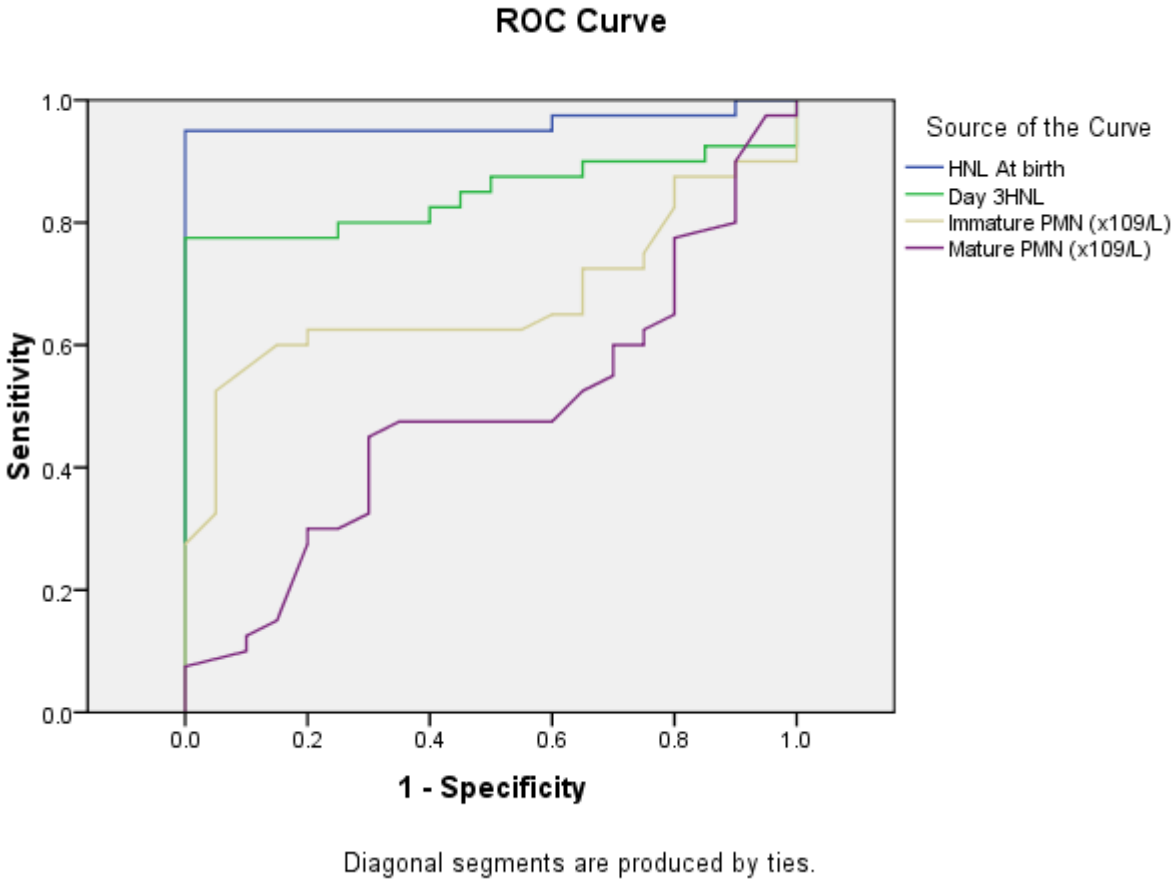
Roc curve for comparison of HNL and I/T ratio and I/M ratio



Area Under the Curve	
Test result variable(s)	**Area**
HNL at birth	**.962**
Day 3HNL	**.848**
I/T ratio	**.841**
I/M ratio	**.698**

The more the area under the curve the better the test

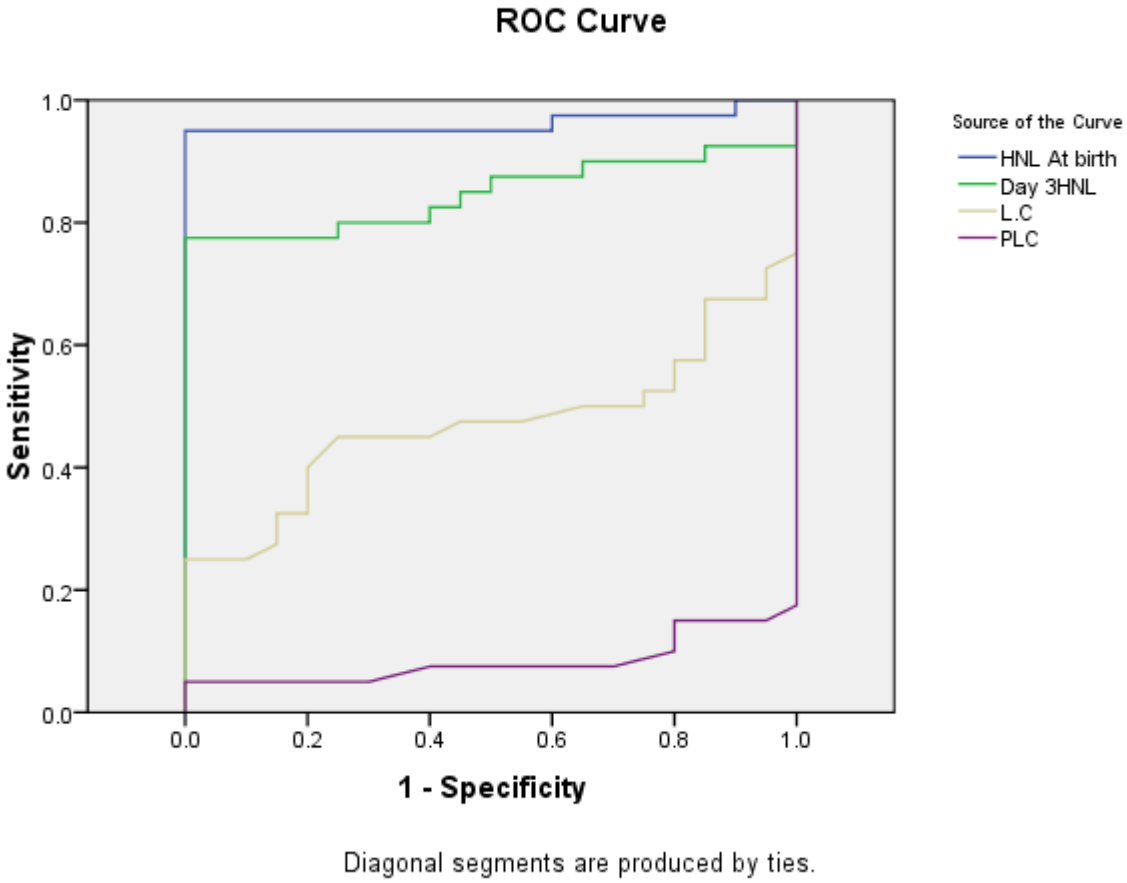
Roc curve for comparison of HNL and immature and mature PMN



Area Under the Curve	
Test result variable(s)	**Area**
HNL at birth	**.962**
Day 3HNL	**.848**
Immature PMN (x109/L)	**.674**
Mature PMN (x109/L)	**.487**

The more the area under the curve the better the test

Roc curve for comparison of HNL and LC and PLC



Area Under the Curve	
Test result variable(s)	**Area**
HNL at birth	**.962**
Day 3 HNL	**.848**
L.C	**.472**
PLC	**.083**

The more the area under the curve the better the test