Results

Table (1): Gestational age of the studied group.

Gestational age	APC level			
	Decreased (n = 20)		Normal (n = 10)	
	No	%	No	%
Full term (n = 21)	12	57.1	9	42.9
Preterm (n = 9)	8	88.9	1	11.1

This table shows that full term neonates were 21 in number and 57.1% of them had decreased APC level while preterm neonates were 9 in number and 88.9% of them had decreased APC level.

Table (2): Sex of the studied group.

Sex	APC level			
	Decreased (n = 20)		**Normal (n = 10)**	
	No	%	No	%
Male (n = 16)	12	75	4	25
Female (n = 14)	8	57.1	6	42.9

This table shows that male neonates were 16 in number and 75% of them had decreased APC level while female neonates were 14 in number and 57.1% of them had decreased APC level.

Table (3): Demographic data in the studied group.

Demographic data	APC Level		Test of significance
	Decreased (n = 20)	Normal (n = 10)	
Body weight	2.44 ± 0.62	2.85 ± 0.73	P = 0.117#
Gestational age	36.25 ± 2.86	37.80 ± 2.39	P = 0.153#

This table shows the mean and standard deviation of birth-weight (kgs), gestational age (weeks). Statistical analysis showed no significant differences in relation to APC levels in studied group.

Table (4): Correlation between plasma APC levels and demographic data in the studied group.

Demographic data	Plasma APC levels	
	Correlation coefficient (r)	P value
Body weight	0.173	0.360
Gestational age	0.210	0.265

This table shows non significant correlation between APC levels and body weight and gestational age using Pearson's correlation coefficient statistical analysis.

Table (5): Relation between PROM and APC level in the studied group.

PROM	APC Level				Chi-square test
	Decreased (n = 20)		Normal (n = 10)		
	No	%	No	%	
Negative	5	25	6	60	P = 0.061
Positive	15	75	4	40	

There is no significant difference between PROM positive and negative as regard APC level.

Table (6): The clinical manifestations according to survival in the studied group.

Manifestations	Survived (n = 22)		Non-survived (n = 8)		Chi-square test
	No	%	No	%	
Poor activity, lethargy					
+ve	17	77.3	6	75	P = 0.896
–ve	5	22.7	2	25	
Respiratory signs "distress, apnea"					
+ve	14	63.6	5	62.5	P = 0.954
–ve	8	36.4	3	37.5	
Thermal instability					
Hypothermia	8	36.4	4	50	P = 0.711
Hyperthermia	2	9	1	12.5	
GIT manifestations					
+ve	6	27.3	2	25	P = 0.901
–ve	16	72.7	6	75	
CNS "convulsions"					
+ve	5	22.7	5	62.5	P =
–ve	17	77.3	3	37.5	0.041*
Hematologic "purpuric eruptions"					
+ve	2	9	2	25	P = 0.257
–ve	20	91	6	75	
CVS signs					
+ve	2	9	1	12.5	P = 0.783
–ve	20	91	7	87.5	
Sclerema					
+ve	0	0	1	12.5	P = 0.092
–ve	22	100	7	87.5	

This table shows the predictors of mortality among the clinical manifestations in the studied group. The CNS manifestations (convulsions) were the only significant predictor signs of mortality as P = 0.041 when comparing the babies who survived to non-survived.

Table (7): Hematological changes in the studied group.

Hematological changes	APC Level		Test of significance
	Decreased (n = 20)	Normal (n = 10)	
Hemoglobin	12.18 ± 1.27	13.44 ± 2.13	P = 0.051#
WBCs	5.34 ± 2.29	7.01 ± 2.64	P = 0.083#
Platelet	129.0 (46 – 304)	228 (115 – 343)	0.023*

Values are expressed as mean ± SD and Median (min – max)

independent t-test

* Mann-Whitney test, P considered significant

This table shows the mean and standard deviation of hemoglobin concentration and WBCs. Statistical analysis showed no significant differences in relation to APC levels in studied group. On the other hand, platelet was expressed as median (min – max) with statistically significant difference.

Table (8): Correlation between plasma APC levels and some hematological changes in the studied group.

Hematological changes	Plasma APC levels	
	Correlation coefficient (r)	P value
Hemoglobin	0.364	0.048*
Platelets	0.472	0.009*
WBCs	0.386	0.035*

This table shows significant positive correlation between APC level and hemoglobin, platelets and WBCs concentrations using Pearson's correlation coefficient statistical analysis.

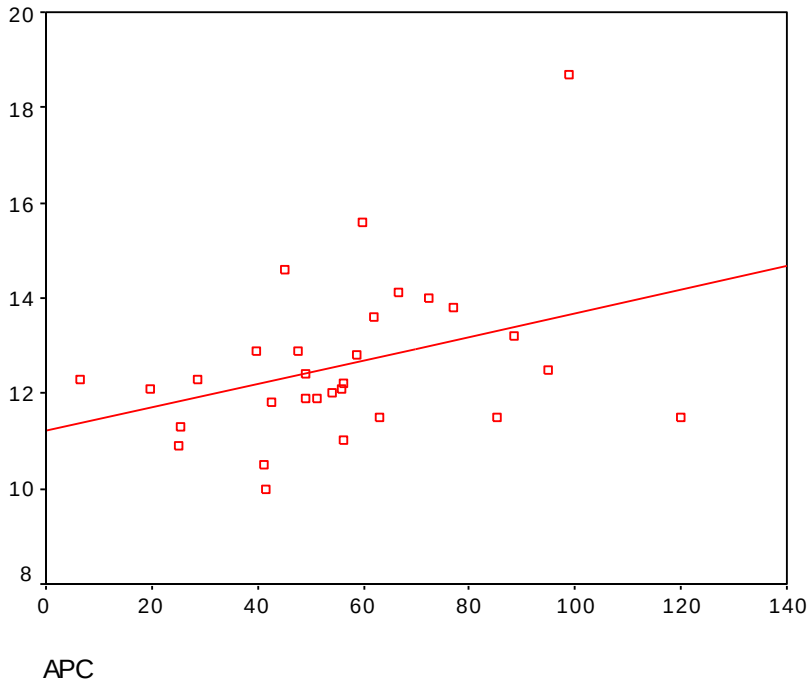

Fig (1): Simple scatter plot showing the positive correlation between APC levels and hemoglobin concentrations in the studied group.

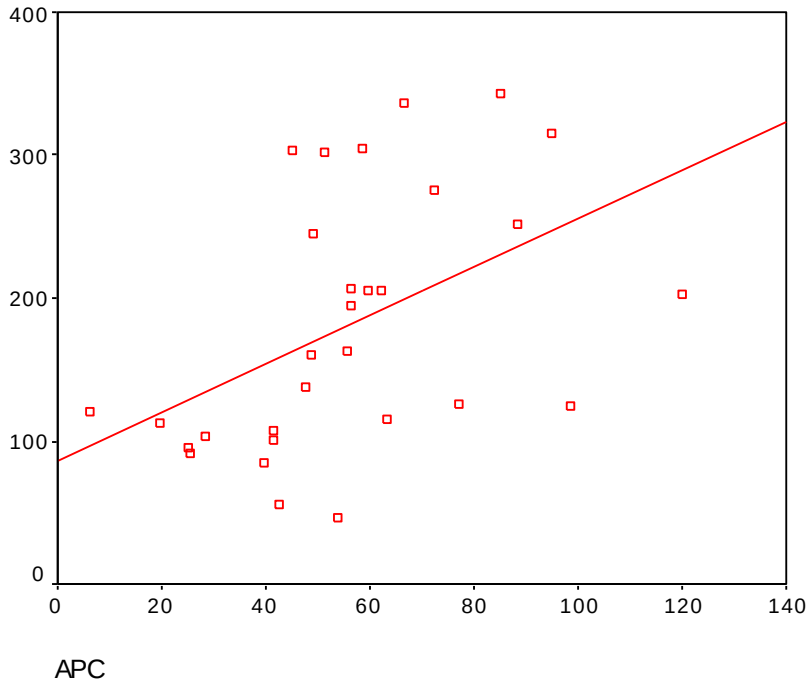

Fig (2): Simple scatter plot showing the positive correlation between APC levels and platelets count in the studied group.

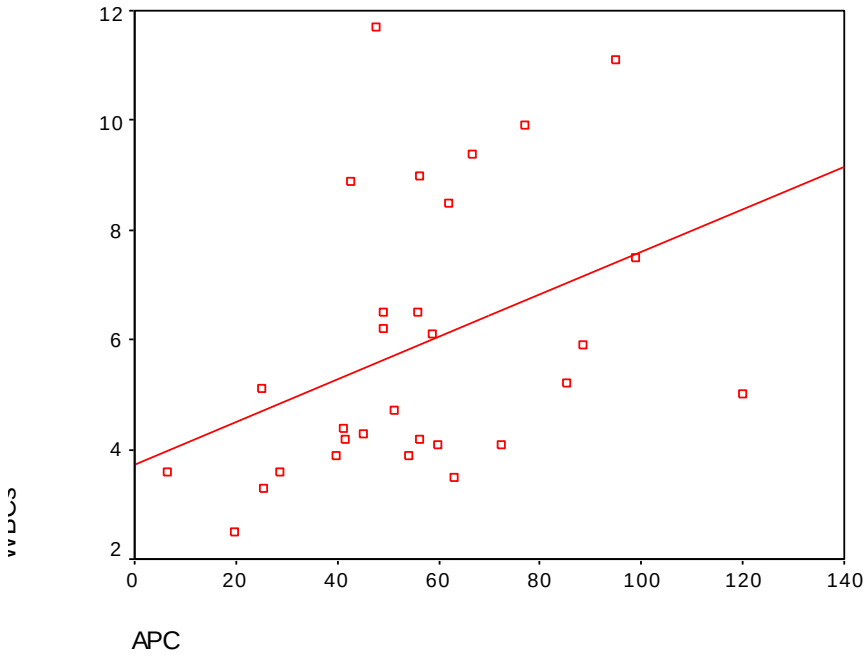

Fig (3): Simple scatter plot showing the positive correlation between APC levels and WBCs concentrations in the studied group.

Table (9): Relation between CRP and APC level in the studied group.

	APC Level		Test of significance
	Decreased (n = 20)	**Normal (n = 10)**	
CRP	48 (6 – 96)	12 (6 – 96)	0.028*

Values are expressed as Median (min – max)

* Mann-Whitney test, P considered significant

This table shows the median (min – max) of CRP with statistically significant difference between the two groups.

Table (10): The culture results of the studied group.

	No.	%
The organisms:	30	100
Klebsiella pneumonia	8	26.7
Methecillin resistant staph. aureus	7	23.3
E. coli	4	13.3
Staph. epidermidis	3	10
Coagulase negative staph.	3	10
Gram positive cocci	2	6.7
Entero cocci	2	6.7
Gram negative diplococci	1	3.3

This table shows the most common organisms were klebsiella (26.7%) followed by methecillin resistant staph. aureus (MRSA) (23.3%), E. coli (13.3%), staph. epidermidis, coagulase negative staph. (10% each) and gram positive cocci, enterococci (6.7% each).

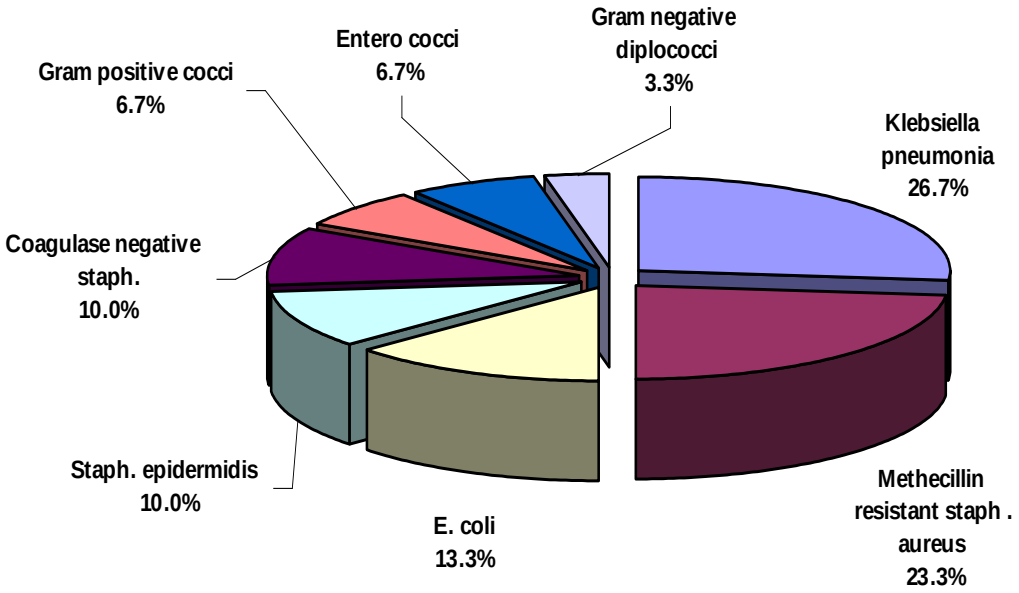

Fig (4): The culture results of the studied group.

Table (11): The causative organisms according to survival in the studied group.

Organisms	Survived (n = 22)		Non-survived (n = 8)	
	No	%	No	%
Klebsiella pneumonia	6	27.3	2	25
MRSA	4	18.2	3	37.5
E. coli	3	13.6	1	12.5
Staph. epidermidis	3	13.6	0	0
Coagulase negative staph.	2	9.1	1	12.5
Gram positive cocci	2	9.1	0	0
Enterococci	2	9.1	0	0
Gram negative diplococci	0	0	1	12.5

This table shows the percentage of death in relation to the causative organisms. Death occurred in (37.5%) of MRSA sepsis followed by (25%) death incidence encountered with klebsiella pneumonia sepsis.

Table (12): Relation between outcome and APC level in the studied group.

Outcome	APC Level				Chi-square test
	Decreased (n = 20)		Normal (n = 10)		
	No	%	No	%	
Dead	8	40	0	0	P = 0.020*
Alive	12	60	10	100	

There was significant difference between APC level and outcome of babies in studied group.

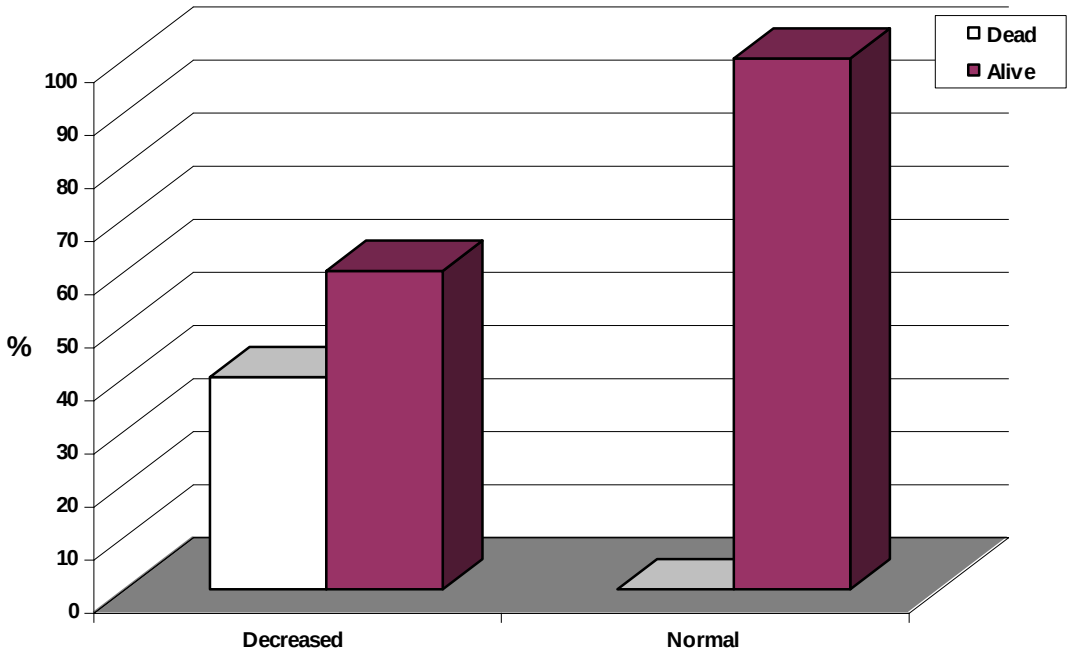

Fig (5): Plasma APC levels in survived and non survived septic neonates.

Table (13): APC levels in survived and non-survived septic neonates in the studied group.

	Dead (n = 8)	Alive (n = 22)	t-test
APC level	28.58 ± 12.44	66.02 ± 20.23	P < 0.001

Values are expressed as mean ± SD

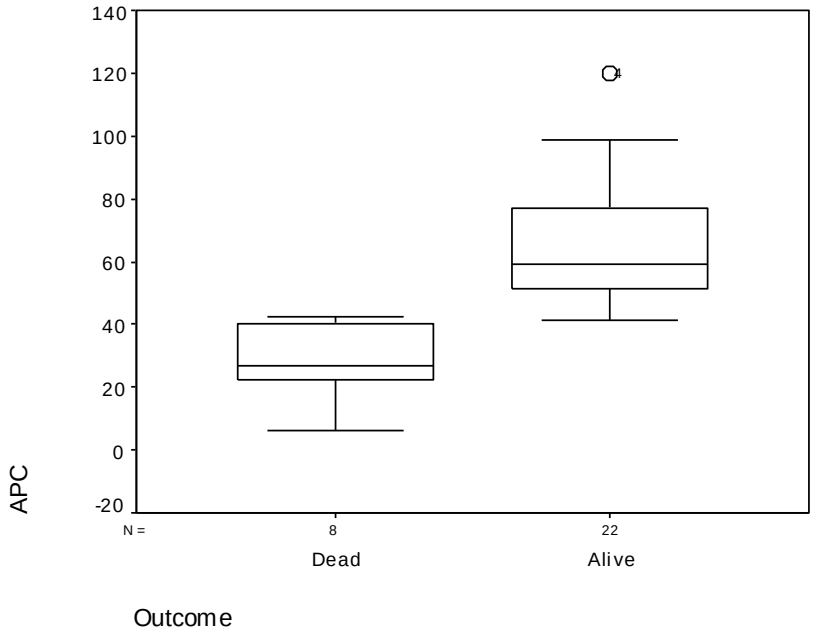

Fig (6): Box plots of APC levels comparing subjects who died and those who survived.

Table (14): Low APC level as a prognostic test for death in neonatal septicemia.

Sensitivity	44.4%
Specificity	0%
Positive predictive value	40%
Negative predictive value	0%
Cutoff point	26.95

A low APC had 44.4% sensitivity and 40% positive predictive value for predicting death in neonatal septicemia