

RESULTS

This study was carried out on 45 neonates (30 septicemic) and (15 control) newborns admitted in NICU in El –menshawy hospital, all parameters in this study were Cross matched among cases and control groups.

Table (1): comparison between cases and control as regard age, weight, gestational age and sex

P=0.05 not significant P < 0.05 significant* P< 0.001 highly significant**

		Cases		Control		X ²	p. value
Age in days		4.83±6.29		4.20±1.20		t. 0.954	>0.05
Weight in kg		2.77±0.89		3.28±0.27		1.625	>0.05
Gestational age in wks		35.90±3.08		38.06±1.43		2.325	>0.05
		N	%	N	%		
Sex	Male	15	50	6	40	0.402	>0.05
	Female	15	50	9	60		

This table shows that there was no statistical significant difference between both groups regarding age, sex, weight and gestational age.

Figure (1) : Distribution of studied group as regard age.

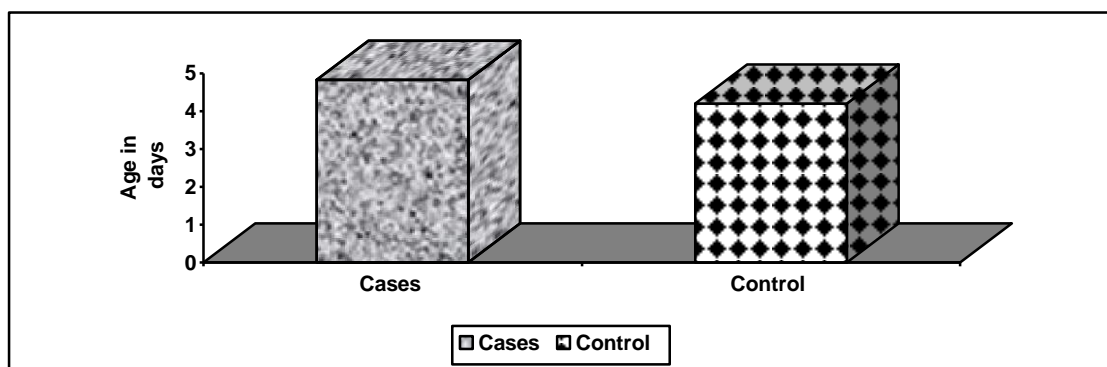
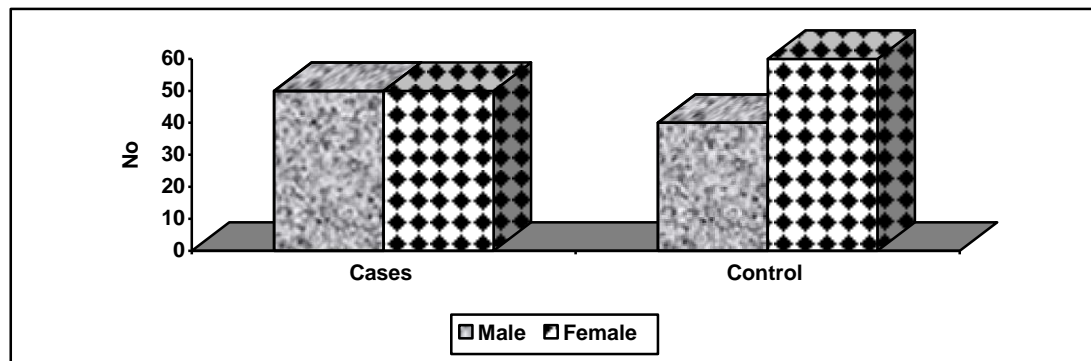
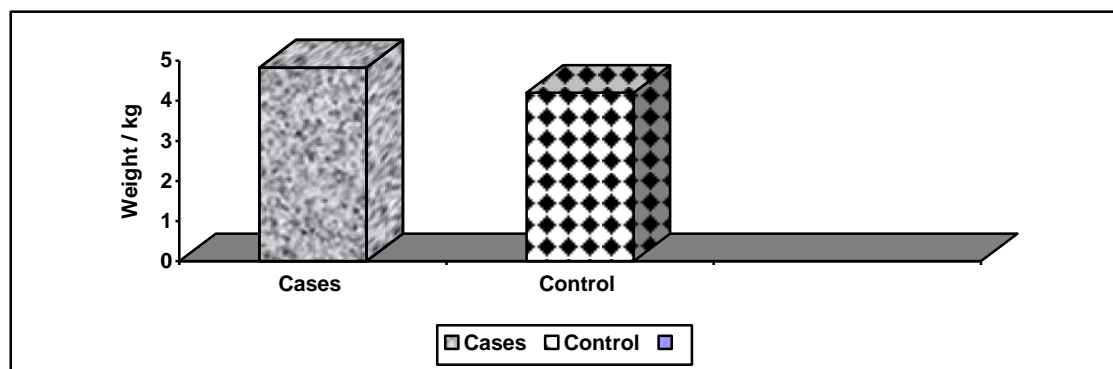
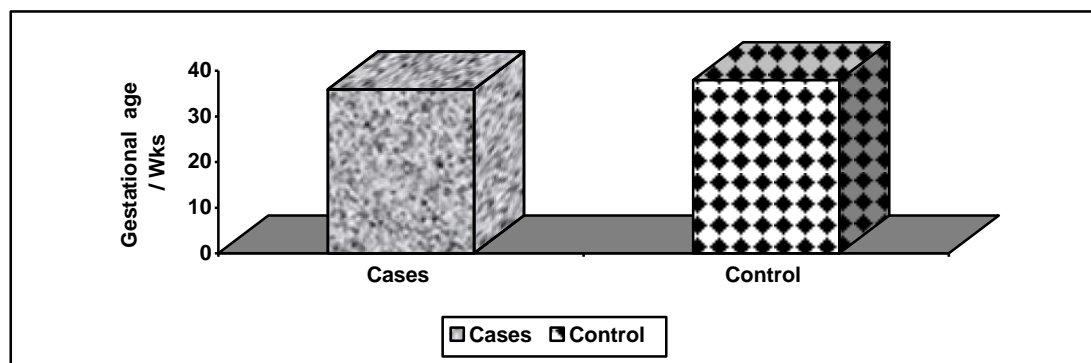


Figure (2) Distribution of studied group as regard sex.**Figure (3) Distribution of studied group as regard weight.****Figure (4) Distribution of studied group as regard gestational age.****Table (2): Comparison between cases and control as regard CRP and IP-10 level.**

	Cases (mean \pm SD)	Control (mean \pm SD)	t. test	p. value
CRP (mg/dl)	53.6 \pm 6.20	0.9 \pm 0.764	5.325	<0.05*
IP-10 (pg/ml) (Interferon gamma inducible protein -10)	397.6 \pm 94.8	20.51 \pm 5.28	21.625	<0.001**

* = significant

**=highly significant

This table shows that septic group had significantly higher plasma level of IP-10 with a cut- off point of 49,6 pg\ml and +veCRP in comparison to control group.

Figure (5) Cases and control as regard CRP level

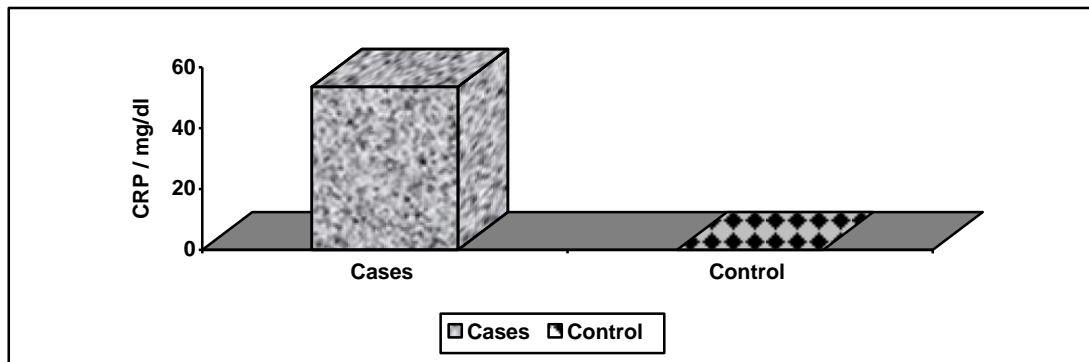


Figure (6) Cases and control as regard IP-10 level .

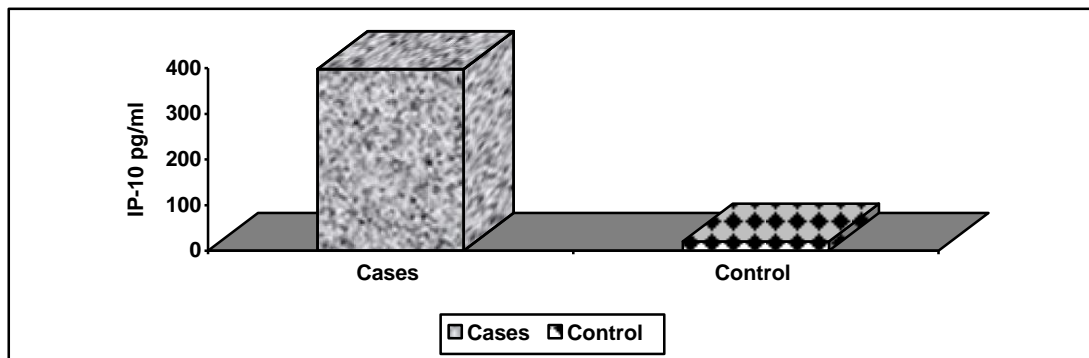
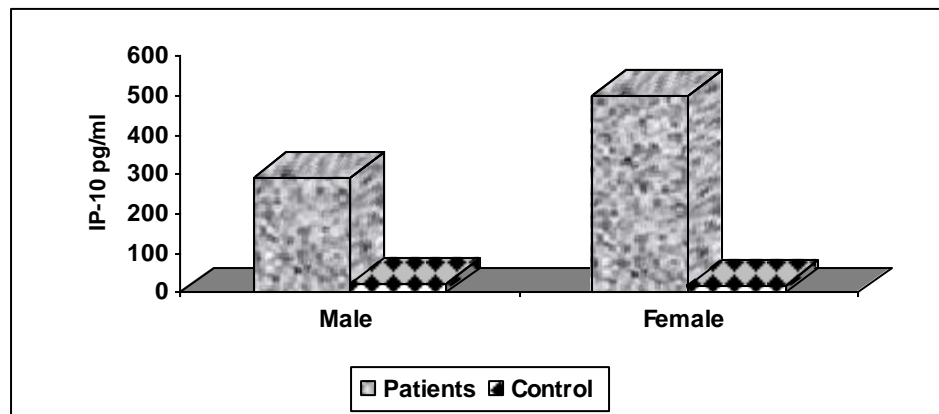


Table (3): IP-10 level in cases and control as regard sex

	IP-10 pg\ml (Interferon gamma inducible protein-10)		t. test	p. value
	Male (mean \pm SD)	Female (mean \pm SD)		
Patients	293.4 \pm 134.7	501.81 \pm 132.5	1.021	>0.05
Control	23.60 \pm 4.39	18.45 \pm 4.99	2.046	>0.05

This table shows no statistical significant difference as regard sex

Figure (7) IP-10 level in cases and control as regard sex.**Table (4) correlation between IP-10 with general data, laboratory data and fate**

	Ip-10	
	r.	p. value
Weight	-0.599	0.001 HS**
CRP	0.372	0.043 S*
blood culture	-0.584	0.001 HS**
clinical sepsis score	0.394	0.031 S*
hematological score	0.452	0.012 S*
T L C	0.311	0.030*
Fate	0.651	0.001 HS**

*=significant

**=highly significant

This table shows correlation of IP-10 with other data ,there was a positive correlation with CRP ,clinical sepsis score, hematological score and TLC with statistically significant difference and negative correlation with weight and blood culture with Highly statistical significant difference and positive correlation with fate was detected.

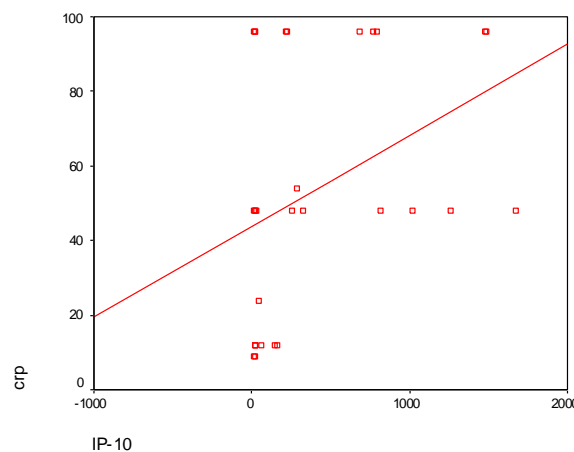
Figure (8) correlation between IP-10 and CRP.

Figure (9) correlation between IP-10 and blood culture.

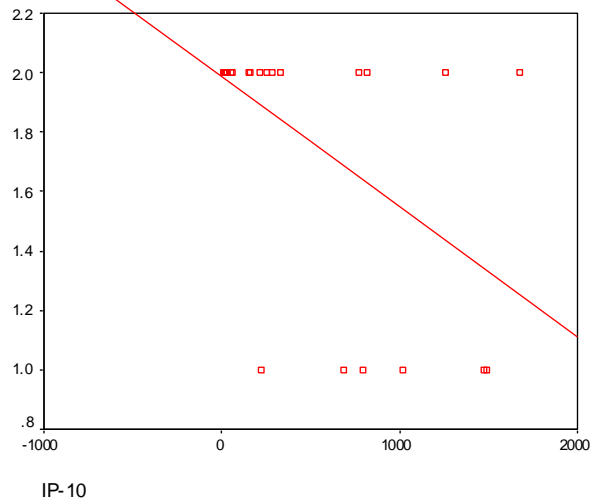


Figure (10) correlation between IP-10 level and haematological score.

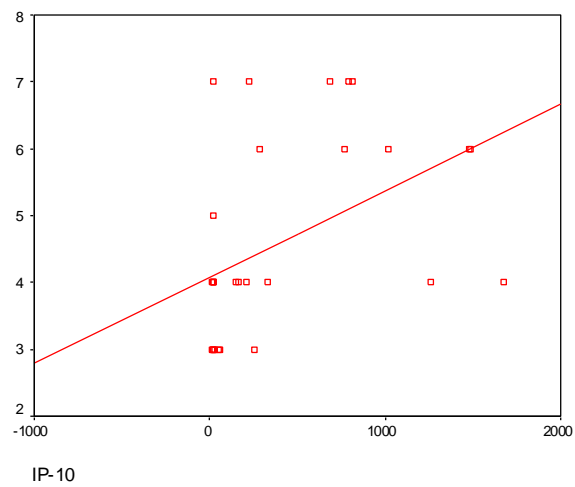


Figure (11) correlation between IP-10 level and fate.

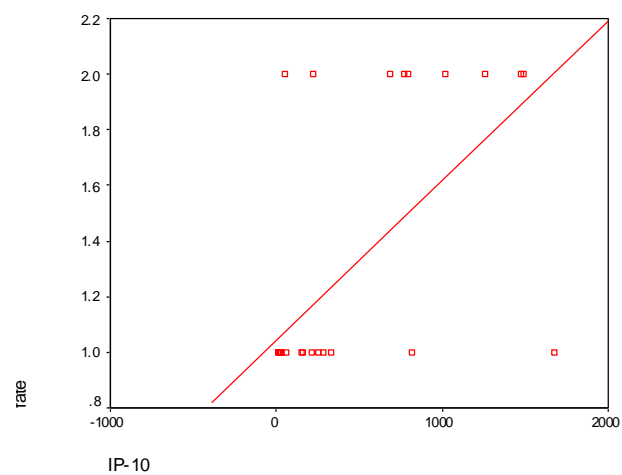


Table (5): comparison between general and laboratory data based on the fate of the patient

		Fate		t. test	p. value
		ALive 21 (70%)	Dead 9(30%)		
Age		4.50±0.83	5.11±1.99	0.314	>0.05
Sex	Male	10(66.7%)	5(33.3%)	1.152	>0.05
	Female	11(73.3%)	4(26.7%)		
Weight (kg)		3.12±0.61	2.21±0.97	3.501	<0.001**
Gestational age(wks)		36.22±3.855	34.3±2.55	0.470	>0.05
CRP (mg\dl)		43.42±6.83	77.3±9.61	2.777	<0.05*
IP-10(pg\ml)		198.39±50.9	862.08±169.3	5.623	<0.001**
Clinical Sepsis Score		11.45±1.21	11.83±1.47	0.554	>0.05
Hematological score		4.09±1.22	5.77±1.39	3.318	<0.05*
TLC		16000±5900	9000±4050	2.337	<0.05*

* = significant

** = non significant

This table shows that there was no statistical significant difference in age, sex, gestational age and clinical sepsis score between alive and dead cases. And there was a high statistical significant difference in weight and IP-10 between dead and alive cases. Also there was a significant difference in CRP, hematological score and TLC between dead and alive cases.

Table(6)The result of blood culture

		blood culture		
		+ve	-ve	Total
cases	N	6	24	30
	%	20.0%	80.0%	100.0%

This table shows that 80% of patients of septic group have no growth while 20% of septic patients have +ve blood culture.

Figure (12): The percentage of +ve and –ve blood culture results in septic babies.

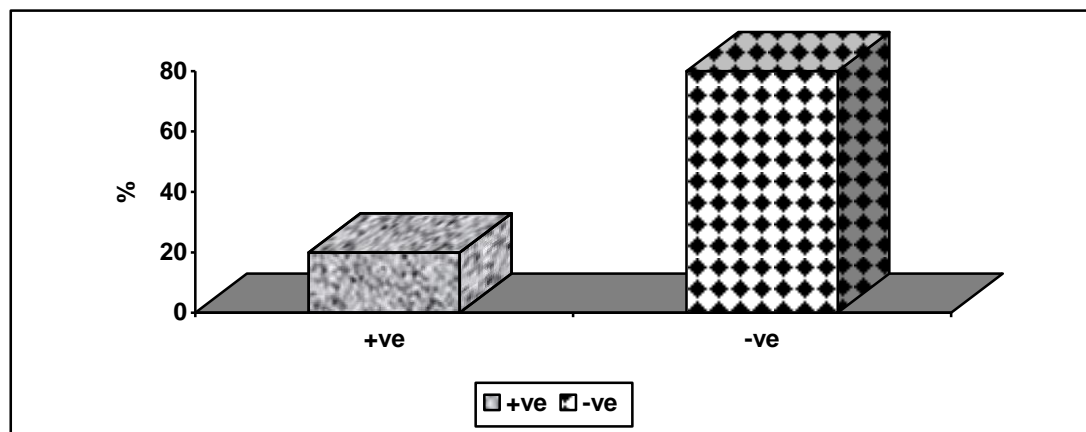


Table (7) IP-10 level versus the result of blood culture

	IP-10 (pg/ml)		t. test	p. value
	Mean	\pm SD		
+ve blood culture	946.96	199.26	5.693	<0.001**
-ve blood culture	260.31	89.01		

****=highly significant**

This table shows highly significant difference between IP-10 versus results of blood cultures

Figure (13): IP-10 level and results of blood culture.

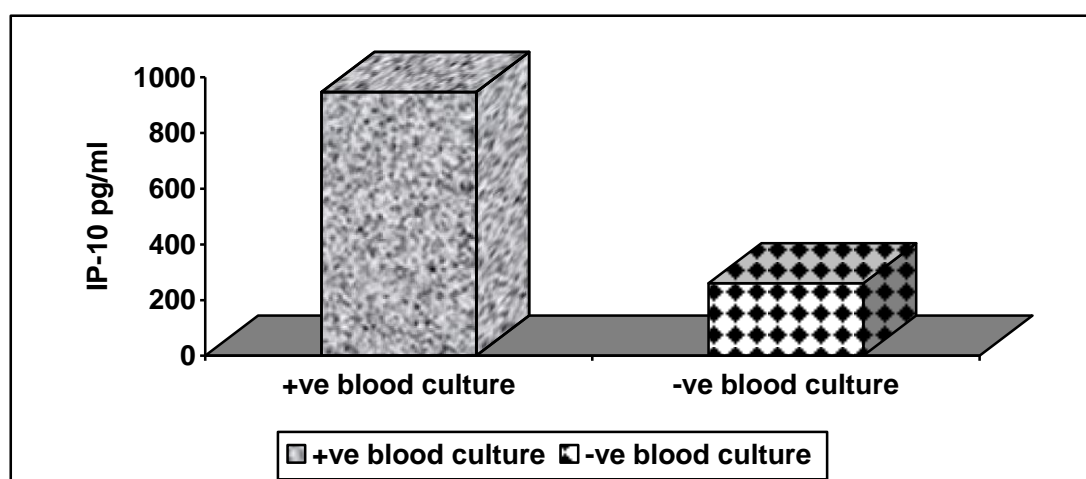
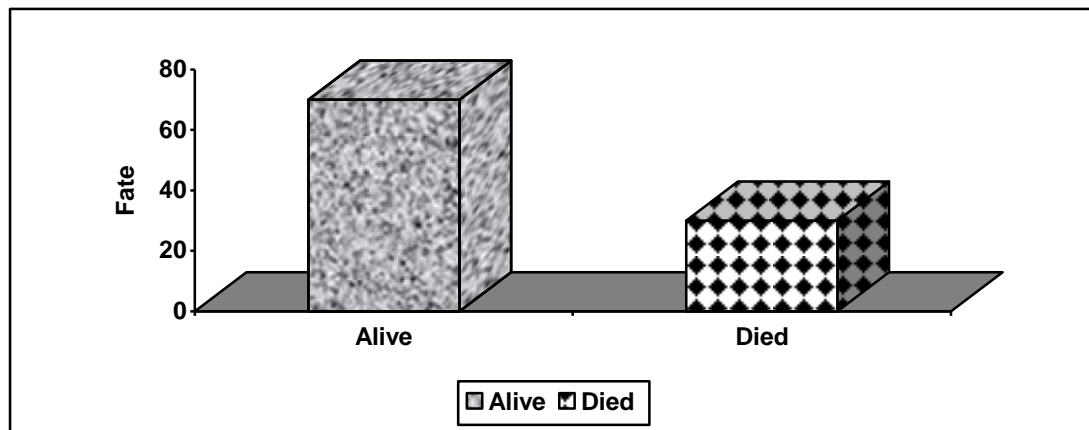


Figure (14) : the fate of septic newborns**Table (8): Comparison between the result of blood culture and the fate of patients**

blood culture		Fate		
		A Live	Dead	Total
+ve	N	-	6	6
	%	-	100.0%	100.0%
-ve	N	21	3	24
	%	87.5%	12.5%	100.0%
Total	N	21	9	30
	%	70.0%	30.0%	100.0%
Chi-Square	X ²	17.500		
	P-value	0.001**		

****=highly significant**

This table shows high significant relation between +ve cultures and the fate of patients (p- value=0.001) .

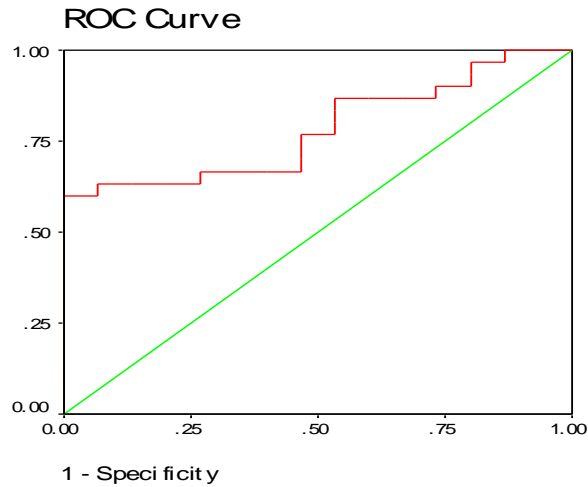
Table (9) IP-10:-cut off, sensitivity, specificity, PPV, NPV, area under curve and accuracy

Cut off	49.6 pg/ml
Area under the curve	0.98%
Sensitivity	84%
Specificity	94.6%
PPV	83%
NPV	94%
Accuracy	80%

PPV=positive predictive value

NPV=negative predictive value

Figure (15) ROC curve for sensitivity and specificity of IP -10 in septic group



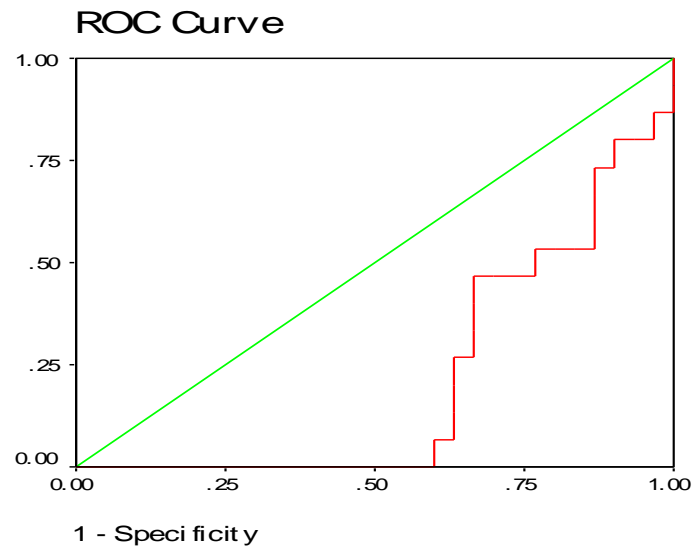
This figure shows the diagnostic value for IP – 10 in septic neonates .

Table (10) :- Table of different variables according to their Sensitivity, Specificity, cut off and Accuracy

	IP-10	IT ratio	TLC	CRP	Total neutrophils
Cut off	49.6 pg/ml	.07	13100 Cell	5.24 mg/dl	3850 Cell
Sensitivity	84 %	59 %	63.2 %	77.52 %	67.5 %
Specificity	94.6 %	57 %	72.5 %	63.5 %	76.2 %
Accuracy	80 %	58 %	66 %	73 %	69 %

This table shows the results of various laboratory data of septic group.

Figure (16) ROC curve for sensitivity and specificity of IP-10 in dead neonates.



Cut off	263 Pg /ml
Sensitivity	87,3%
Specificity	83,2%

This figure shows the prognostic value for IP – 10 in dead neonates .