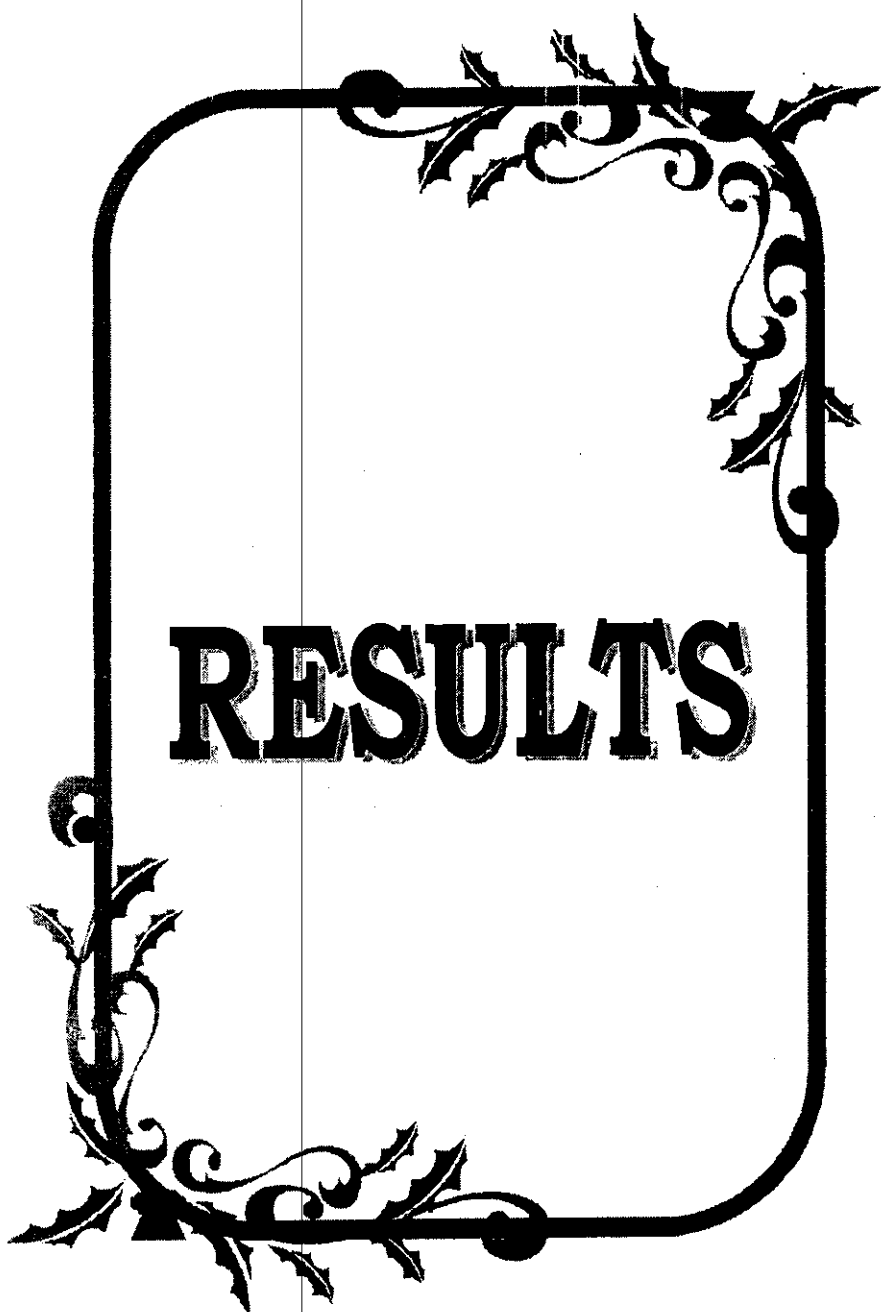

RESULTS

RESULTS

This study was carried out on 60 newborn infants they were comprised of 40 septicemic neonates, (20 fullterms, 20 preterms) who were admitted to the NICU in Benha University Hospital. It also included 20 neonates with no evidence of sepsis serving as a control group "10 fullterms, 10 Preterms".

Venous blood samples were obtained from these infants at admission and a subsequent sample was obtained after treatment. The following laboratory tests were conducted on the obtained blood samples:

- Blood culture.
- CRP
- CBC
- IL-6
- Defensin (HNP-1).

All parameters were cross matched among septicemic and control fullterms in one hand and between septicemic and control preterms on the other hand.

Table (1) & Fig. (1) show the range, mean and standard deviation of gestational age (weeks) among the studied groups. In the septicemic full terms, the gestational age ranged between 38 – 42 weeks with a mean value of 39.8 ± 1.361 weeks.

In healthy fullterms the gestational age ranged between 37 – 42 weeks with a mean value of 39.6 ± 1.265 weeks. The P. value was > 0.05.

In septicemic preterm, the gestational age ranged between 34 – 36 week with a mean value of 35.1 ± 0.788 weeks. In healthy preterms their gestational age ranged between 33 – 36 weeks with a mean value of 34.8 ± 1.033 weeks. The P. value was > 0.05.

No significant difference was observed between the septic and the non septic groups.

Table (2) & Figure (2) show the sex distribution of the newborn infants under the study. The septic group was composed of 40 cases (23 males (57.5%) and 17 females (42.5%)) and the healthy group was composed of 20 cases (9 males (45%) and 11 female (55%)) with p. value > 0.05.

No statistically significant difference was observed between the septic and the non septic groups as regards sex.

Table (3) & Figure (3) show the range, mean and standard deviation of body weight (grams) among the studied groups. In the septicemic fullterms their birth weight ranged between 3100 – 3750 gm with a mean of 3250 ± 147.26 gm. In the healthy fullterms it ranged between 3000 – 3850 gm with a mean value of 3210 ± 243.88. The P. value was > 0.05. While, in septicemic preterms it ranged between 1950 – 2400 gm with a mean value of 2092 ± 97.7. In healthy preterms, it ranged between 1800 – 2350 with a mean value of 2150 ±139.84. The P.value was > 0.05.

No significant difference was observed between septic and healthy groups as regards body weight.

Table (4) shows the distribution of the studied groups according to the mode of delivery, 35 cases 958.4%) were delivered by vaginal delivery and 25 cases (41.6%) were delivered by cesarean section. In septicemia newborns 23 cases (57.5%) were delivered by NVD and 17 cases (92.5%) were deliver by C.S. In the healthy newborns 12 cases (60%) were delivered by NVD and 8 cases (40%) were delivered by C.S. with P. value > 0.05. No significant difference was observed between the septic and the non septic groups.

Table (5) shows the age at onset of septicemia among the septicemia groups. In septicemic fullterms, the age at onset of sepsis ranged between 3-18 days with a mean value of 10.26 ± 4.592 days. In septicemic preterms it ranged between 2-6 days with a mean value of 4.15 ± 1.089 days. The P.value was < 0.05. A significant difference was observed between septicemic full terms and preterms regards the age at onset of sepsis.

Table (6) shows the distribution of clinical presentation among septicemic fullterms. The most common clinical presentations were poor feeding (95%), lethargy (85%) respiratory distress and hypothemia (60%). Less common were abdominal distension 40%, hepatomegally (35%), apnea 25%, jaundice 20% and fever 15%.

Table (7) shows the distribution of clinical presentations among septicemic preterms. The most common clinical presentation were poor feeding (100%), lethargy (90%) respiratory distress (75%) and hypothermia (65%). Less common were apnea (50%), hepatomegaly (30%), pallor and jaundice (15%).

Table (8) & Figure (4) show the range, mean and standard deviations of serum CRP among the studied groups. In septicemic fullterms serum CRP ranged between 0-52 mg/l with a mean value of 22.75 ± 17.326. Meanwhile, the CRP of healthy fullterms ranged between 0 – 6.5 mg/L with mean of 1.3 ± 2.741 (P. value was < 0.001). In septicemic preterms serum CRP ranged between 0 – 52 mg/L, with a mean value of 19.85 ± 15.86. Meanwhile, CRP of healthy preterms ranged between 0-6.5 mg/L with a mean of 1.95 ± 3.13. (P. value was < 0.001).

A highly significant difference was observed between septic and healthy groups as regards mean CRP level

Table (9, 10) show the diagnostic value of CRP as a screening test among the studied group. In septicemic full terms CRP was positive in 18 cases out of 20 septicemic cases and negative in 10 cases out of 10 healthy newborns so its sensitivity was 90% and its specificity was 100%. In septicemic preterms CRP was positive in 15 cases out of 20 septicemic newborns and negative in 10 control newborns. So, its sensitivity was 75% and its specificity was 100%. In all septicemic cases CRP was positive in 33 cases out of 40 septic cases so its sensitivity was calculated to be 82.5% and its specificity was 100% in all septicemic cases (preterms & fullterms).

Table (11) & Figure (5) show the range, mean and standard deviations of HSS among the studied groups. In the sepeticemic fullterms, HSS was ranging between 1-6 and a mean of 3.9 ± 1.165 and in the healthy fullterms, it ranged between 0-2 and a mean of 0.9 ± 0.87 (p. value < 0.001). In the septicemic preterms, HSS was ranging between 1-5

and a mean of 4.4 ± 0.503 and in healthy preterms it ranged between 0-2 and a mean of 1.2 ± 0.422 (p. value < 0.001).

There was a highly significant difference between the septic and non septic groups.

Table (12) shows the diagnostic significance of individual hematological findings of HSS in the studied groups. In septicemic full terms, TPMNs showed a high sensitivity (90%) followed by I : T ration (82%) and I : M ration (80%). In septicemic preterms, TPMNs also showed a high sensitivity (81%) followed by I : T ratio 70%. In all septicemic cases platelet count showed a high specificity (100%).

Table (13, 14): Show the diagnostic value of HSS as a screening test in comparison to blood culture as a definitive test. In septicemic fullterms HSS was positive in 17 cases out of 20 septicemia newborns and negative in 10 cases out of 10 healthy newborns. So its sensitivity was calculated to be 85% and its specificity was 100% in septicemic full terms. In septicemic preterms, HSS was positive in 12 cases out of 20 septic cases so, its sensitivity was 60% and its specificity was 100%. In all septicemic newborns, HSS was positive in 29 cases out of 40 septic cases so its sensitivity was calculated to be 72.5% and its specificity was 100%.

Table (15) shows the organisms detected in the blood cultures of the septicemic neonates 40 cases showed positive blood culture : E. coli was the most frequent causative organism (40%), followed by GBS (25%) staph aureus (20%) and klebsiella (15%).

Table (16) & Figure (6) show the range, mean and standard deviations of serum IL-6 among the studied groups.

In septicemic fullterms there was a highly significant increase in the level of IL-6 in the septic cases as compared to the non septic cases (mean = 1366.2 ± 647.02 pg/ml in septic cases VS 48 ± 40.1 pg/ml in non – septic cases with p. value < 0.001).

In septicemic preterms there was a highly significant increase in the level of IL-6 in the septic cases in compared to the non septic cases (mean = 911.5 ± 407.7 pg/ml in septic cases VS. 28.5 ± 26.8 pg/ml in non septic cases with P. value < 0.00).

Table (17 & 18) show the diagnostic value of IL-6 as a screening test in comparison to the blood culture as a definitive test. In septicemic fullterms IL-6 was positive in 19 cases out of 20 cases and negative in 10 cases out of 10 healthy fullterms so, its sensitivity was 95% and its specificity was 100%. In septicemic preterms IL-6 was positive in 17 cases out of 20 septicemic preterms and negative in 9 cases out of 10 uncomplicated preterms, so its sensitivity was 85% and its specificity was 90%. In all septicemic cases IL-6 was positive in 36 cases out of 40 septicemic cases and negative in 19 cases out of 20 non septicemic newborns. Therefore, its sensitivity was calculated to be 90% and its specificity was 95%.

Table (19) & Figure (8) show the range, mean and standard deviations of serum defensin among the studied groups. In septicemic fullterms, there was a highly significant increase in the level of defensin (HNP-1) in the septic cases as compared to the nonseptic cases (mean = 60178.5 ± 5640.3 ug/ml) in septic cases VS. (115 ± 75.4 ug/ml) in non septic cases with P.value < 0.001).

In septicemic preterms, there was a highly significant increase in the level of HNP-1 in the septic cases as compared to the non septic cases

(mean = 9779.5 ± 10404.5 ug/ml in septic cases VS. (46.5 ± 60.5 ug/ml) in non septice cases (with P. value < 0.001).

Table (20, 21) show the diagnostic value of defensin (HNP-1) as a screening test in comparison to the blood culture as a definitive test. In all septicemic cases HNP-1 was positive in 37 cases out of 40 septicemic cases and negative in 20 cases out of 20 non septicemic newborns. Therefore, its sensitivity was calculated to be 92.5% and its specificity was 100% in septicemic fullterms defensin was positive in 19 cases out of 20 so, its sensitivity was 95% and In septicemic preterms defensin was positive in 18 cases out of 20 cases so, its sensitivity was 90% and its specificity was 100%.

Table (22): Shows the correlation between the serum level of defensin (HNP-1) and other variables (TPMNs, HSS, CRP- IL-6 and Gram, Negative septicemia), before and after treatment among all septicemic cases. There was a significant correlation were observed between HNP-1 and TPMNs, IL-6 with p. value < 0.05). No significant correlation was observed with other variables (CRP, HSS and gram – negative septicem).

Table (23 – 24): show the correlation between the defensin (HNP-1) With other variables (TPMNs, HSS, CRP, IL-6) before and after treatment among the studied groups.

In septicemic fullterms, a significant correlation was observed between defensin and TPMNs before treatment only. On the other hand a significant correlation was observed between defensin and IL-6 before and after treatment. The same correlations were observed in speticemic preterms.

Table (25) shows the range, mean and standard deviations of serum defensin among the septicemic neutropenic and non neutropenic cases. There was a highly significant increase in the level of defensin (HNP-1) in the neutropenic and non neutropenic cases as compared to the healthy newborns (mean = 3965.2± 2012.4 ug/ml and 58264.5 ± 41520.5 ug/ml) in septicemic neutropenic and septicemic non-neutropenic cases, respecitivily VS (88.3 ± 72.4 ug/ml) in healthy newborns (with P. value < 0.001) there was a marked significant increased in the level of defensin in the non neutropenic cases as compared to neutropenic case (with P.value < 0.05).

Table (26) shows the correlation between the absolute neutrophils count in septicemic neutropenic and non-neutropenic cases and other variables (Defensin, IL-6 and CRP).

In septicemic non-neutropenic cases, there was a significant correlation was obseved between neutrophils count and defensin (with P.vlaue < 0.05). while no correlation with (IL-6 and CRP).

In septicemic neutropenic cases there was no correlation was observed between neutrophils count and defensin, IL-6 and CRP with (P > 0.05).

Table (27) shows the correlation between the absolute neutrophils count in septicemic neutropenic and non-neutropenic peterms and other variables (Defensin, IL-6 and CRP).

In septicemic non-neutropenic peterms, there was a significant correlation was observed between neutrophils count and defensin (with P.vlaue < 0.05). while no correlation with (IL-6 and CRP).

In septicemic neutropenic peterms there was no correlation was observed between neutrophils count and defensin, IL-6 and CRP with ($P > 0.05$).

Table (28) shows the comparison between the mean values of the results of laboratory investigations before and after treatment among the septicemic fullterms. The mean value of HSS was 3.9 ± 1.165 before treatment VS. 0.45 ± 0.60 after treatment with p. value < 0.05. The mean value of CRP was 23.4 ± 16.6 before treatment Vs. 2.27 ± 13.1 after treatment with p. value < 0.05. The mean value of TPMNs was 7936.2 ± 4633.8 before treatment Vs. 3259.7 ± 1332.3 after treatment with p. value < 0.05) as regards IL-6 the mean value was 1366.2 ± 647.2 before treatment vs 162.05 ± 105.4 after treatment with p. value < 0.001), the mean value of defensin (HNP-1) was 6178.5 ± 56799.3 before treatment Vs. 265.5 ± 270.1 after treatment with (P. value < 0.001). A highly significant difference was observed in the mean IL-6 and defensin levels and also there as a significant difference in HSS, CRP and TPMNs before and after treatment in septicemic fullterms.

Table (29) shows the comparison between the mean values of the results of laboratory investigations before and after treatment among the septicemic preterm. The mean value of HSS was 4.4 ± 0.50 before treatment VS. 0.55 ± 0.68 after treatment with P. value < 0.001. The mean value of CRP was 31.8 ± 20.8 before treatment Vs. 3.27 ± 5.03 after treatment with P. value < 0.05. The mean value of TPMNs was 4200 ± 3281.1 before treatment Vs. 3017 ± 1118.7 after treatment with p. value < 0.05) as regards IL-6 the mean value was 911.5 ± 407.7 before treatment vs 111.5 ± 82.2 after treatment with P. value < 0.001), the mean value of defensin (HNP-1) was 9779 ± 10404.5 before treatment Vs.

66.2 ± 61.8 after treatment with (P. value < 0.05). A highly significant difference was observed in the mean IL-6 and defensin levels and also there as a significant difference in HSS, CRP and TPMNs before and after treatment in septicemic preterms. No significant difference was observed regards TPMNs.

Table (30) shows the comparison of the diagnostic value of the studied parameters in detection and exclusion of sepsis in the studied cases. In septicemic fullterms the sensitivity of defensin, IL-6, CRP, HSS, TPMNs and I : T ratio were 95%, 95%, 90%, 85%, 90% and 82% respectively and their specificity were 100% for all except TPMNs was 87% and I : T ration was 85%. In septicemic preterms, their sensitivity were 90%, 85%, 75%, 60%, 81% and 70% respectively and their specificity were 100% for defensin, CRP and HSS while IL-6 was 95%, TPMNs was 76% and I : T ratio was 80%.

Figure (7) shows the individual IL-6 level in septicemic fullterms and septicemic preterms before and after treatment. The cut off point of IL-6 for sepsis was > 500 pg/ml.

Figure (9) shows the individual defensin level in septicemic fullterms and septicemic preterms before and after treatment. The cut off point of defensin for sepsis was > 250 ug/ml.

Table (1): Gastational age (weeks) among the studied groups.

Gestational age "Weeks" / Studied groups	Range	X	± SD	Tests of significance		
				( )	T	P
1- Septicemic fullterms (n =20)	38 – 42	39.8	± 1.361	1* 2	0.3979	> 0.05
2 – Healthy fullterms (n =10)	37-42	39.8	± 1.265			
3- Septicemic preterms (n = 20)	34 – 36	35.1	± 0.788	3*4	0.269	> 0.05
4- Uncomplicated preterms (n=10)	33 – 36	34.8	± 1.033			

Table (2) : Sex distribution among the studied groups

Sex / Studied groups	Males		Females	
	No.	%	No.	%
1- Septicemic newborns	23	57.5	17	42.5
2- Healthy newborns	9	45.0	11	55.0
Total	**32**	**53.3**	**28**	**46.7**

Df = 3

$X^2 = 0.6249$

$P > 0.05$

Table (3) : Body weight (grams) among the studied groups.

Weight "grams" / Studied groups	Range	X	± SD	Tests of significance		
				( )	T	P
1- Septicemic fullterms	3100 – 3750	3250	+ 147.256	1*2	0.2386	> 0.05
2 – Healthy fullterms	3000 – 3850	3210	±24308812			
3- Septicemic preterms	1950 – 2400	2092	± 97.704	3*4	1.4699	> 0.05
4- Uncomplicated preterms	1800 – 2350	2150	± 139.84			

Table (4): Distribution of the studied groups according to mode of delivery.

Mode of delivery / Studied groups	C.S.		NVD	
	No.	%	No.	%
Septicemic newborns n=40	17	42.5	23	57.5
Healthy newborns n = 20	8	40.0	12	60.0
Total	**25**	**41.6**	**35**	**58.4**

$X^2 = 0.541$

$P > 0.05$

Table (5) : Age at onset of septicemia among the septicemic groups.

Days of onset / Studied groups	Range	X	± SD	Tests of Significance	
				T	P
1- Septicemic fullterms	3 –18	10.26	± 4.5921	0.4386	< 0.05
2- Septicem preterms	2 – 6	4.15	± 1.089		

Table (6): Frequency distribution of clinical presentations among septicemic fullterms.

Clinical findings	Number of cases	%
1- Poor feeding	19	95.0
2- Lethargy	17	85.0
3- Hypothermia	12	60.0
4- Respiratory distress	12	60.0
5- Abdominal distension	8	40.0
6- Hepatomegaly	7	35.0
7- Seizures	6	30.0
8- Diarrhea	5	25.0
9- Irritablility	5	25.0
10- Apnea	5	25.0
11- Vomiting	4	20.0
12- Jaundice	4	20.0
13- Fever	3	15.0
14- Pallor	3	15.0

N.B: Patients presenting by more than one clinical presentation have been recorded more than once according to each of the clinical findings present.

Table (7): Frequency distribution of clinical presentations among septicemic preterms.

Clinical findings	Number of cases	%
1- Poor feeding	20	100.0
2- Lethargy	18	90.0
3- Respiratory distress	15	70.0
4- Hypothermia	13	65.0
5- Abdominal distension	10	50.0
6- Apnea	10	50.0
7- Diarrhea	8	40.0
8- Seizures	6	30.0
9- Hepatomegaly	6	30.0
10- Irritablility	5	25.0
11- Vomiting	4	20.0
12- Pallor	3	15.0
13- Jaundice	3	15.0
14- Fever	0	0.0

N.B.: Patients presenting by more than one clinical presentation have been recorded more than once according to each of the clinical findings present.

Table (8): C. reactive protein (CRP) among the studied groups.

CRP "mg/L / Studied groups	Range*	X	± SD	Tests of significance		
				( )	T	P
1- Septicemic fullterms	0 – 52	22.75	+ 17.326	1* 2	5.403	< 0.001
2 – Healthy fullterms	0-6.5	1.3	± 2.741			
3- Septicemic preterms	0 – 52	19.85	± 15.86	3*4	6.268	< 0.001
4- Uncomplicated preterms	0 – 6.5	1.95	± 3.139			

Table (9): Diagnostic value of CRP as a screening test among the studied groups.

Blood culture / CRP		Positive Septicemic (n= 20)	Negative Control (n = 10)	Sensitivity %	Specificity %
Septicemic	CRP +ve	18	0	90%	100 %
fullterms	CRP –ve	2	10		
Septicemic	CPR +ve	15	0	75%	100%
preterms	CPR –ve	5	10		

Table (10): Diagnostic value of CRP as a screening test in comparison to blood culture as a definitive test.

Blood culture / CRP	Positive "septicemic"	Negative "control"	Total
Positive	33	0	**33**
Negative	7	20	**27**
Total	**40**	**20**	**60**

1- Sensitivity = 82.5 %

2- Spectificity = 100 %

Table (12): Diagnostic significance of individual hemotogical findings of hematological scroing system (HSS) in all cases (fullterms and preterms).

Statistical study / H.S.S	Septicemic fullterms		Septicemic preterms	
	Sensitivity %	Specificity %	Sensitivity %	Specificity %
1- TLC < 5000 or > 21000 / mm^3	45	34	25	40
2- TPMNs < 1750 or > 5400 /mm^3	90	87	81	76
3- IPMNs > 500 /mm3	62.5	75	60	57
4- I : T ratio > 0.16	82	85	70	80%
5- I : M ratio > = 0.3	80	78	68	75
6 – Platelet count < = 150000	35	100	53	100
7- Degenerative changes (+ve)	0.0	0.0	0.0	0.0

Table (13): Diagnostic value of HSS as a screening test among the studied groups.

Blood culture / HSS		Positive Septicemic (n= 20)	Negative Control (n = 10)	Sensitivity %	Specificity %
Septicemic fullterms	HSS +ve	17	0	85%	100 %
	HSS –ve	3	10		
Septicemic preterms	HSS +ve	12	0	60%	100%
	HSS –ve	8	10		

Table (14): Diagnostic value of HSS as a screening test in all septicemic cases.

Blood culture / HSS	Positive "septicemic"	Negative "control"	Total
Positive	29	0	**29**
Negative	11	20	**31**
Total	**40**	**20**	**60**

Sensitivity : 72.5%

Specificity : 100 %

Table (15): Causative organisms among septicemic groups.

Septicemic groups / Blood culture	Septicemic fullterms		Septicemic preterms		Total	
	No.	%	No.	%	No.	%
E.Coli.	8	40.0	10	50.0	18	45.0
Streptococci (GBS)	5	25.0	5	25.0	10	25.0
Staph aureus	4	20.0	3	15.0	7	17.5
Klebsiella	3	15.0	2	10.0	5	12.5
Total	20	100.0	20	100.0	40	100.0

Df = 3

$X^2 = 1.29$

$P > 0.05$

Table (16): Serum IL-6 (Pg/ml) among the studied groups.

IL-6 (Pg/ml) / Studied groups	Range	X	± SD	Tests of significance		
				( )	T	P
1- Septicemic fullterms	330 – 2650	1366.25	±647.02	1*2	9.077	< 0.001
2 – Healthy fullterms	0 – 110	48.0	± 40.15			
3- Septicemic preterms	140-1800	911.5	± 407.76	3*4	9.643	< 0.001
4- Uncomplicated preterms	0-80	28.5	± 26.88			

The Cut-off point for positivity of IL-6 in venous blood samples was > 500 Pg/ml *(Lehrnbecher et al., 1995 and Shaheen et al., 1998).*

Table (17): Diagnostic value of IL-6 as a screening test among the studied groups.

Blood culture / IL-6		Positive Septicemic (n= 20)	Negative Control (n = 10)	Sensitivity %	Specificity %
Septicemic	IL-6 +ve	19	0	95%	100 %
fullterms	IL-6 –ve	1	10		
Septicemic	IL-6 +ve	17	1	85%	90%
preterms	IL-6 –ve	3	9		

N.B. : The cut –off point for positivity of IL-6 in venous blood samples was > 500 pg/ml. ***(Lehrnbecher et al., 1995 and Shaheen, 1998).***

After treatment IL-6 levels decreased under (500 pg/ml) in all septicemic cases (100%).

Table (18): Diagnostic value of IL-6 as a screening test in comparison to blood culture as a definitive test:

Blood culture / IL-6	Positive "septicemic"	Negative "control"	Total
Positive	36	1	37
Negative	4	19	23
Total	40	20	60

1- Sensitivity : 90%

2- Specificity = 95%

Table (19): Serum defensin (µg/ml) among the studied groups

Defensin ug/ml / Studied groups	Range	X	± SD	Tests of significance		
				( )	T	P
1- Septicemic fullterms (n =20)	120-135.000	60178.5	± 56400.31	1* 2	4.767	< 0.001
2 – Healthy fullterms (n = 20)	0 – 210	115.2	± 75.42			
3- Septicemic preterms (n = 20)	170 – 35.000	9779.5	±10404.59	3*4	4.183	< 0.001
4- Uncomplicated preterms (n=10)	0 – 150	46.5	± 60.56			

N.B.: The cut – off point for positivity of defensin in venous blood sample was > 213 ng/ml ***(Panyutich et al., 1993).***

Table (20): Diagnostic value of defensin (HNP-1) as a screening test among the studied groups.

Defensin \ Blood culture		Positive Septicemic (n= 20)	Negative Control (n = 10)	Sensitivity %	Specificity %
Septicemic	HNP-1+ve	19	0	95%	100 %
Fullterms	HNP-1–ve	1	10		
Septicemic	HNP-1+ve	18	0	90%	100%
Preterms	HNP-1–ve	2	10		

N.B. :

- The cut off point for positivity of defensin (HNP-1) in venous blood samples was > 213 ng/ml ***(Panyutich et al., 1993).***
- After completion of antibiotic therapy, only 3 cases (7.5%) of all septicemic neonates remained elevated (one septicemic fullterm and 2 septicemic preterms).

Table (21): Diagnostic value of defensin as a screening test in comparison to blood culture as definitive test

Blood culture / Defensin	Positive "septicamic"	Negative "control"	Total
Positive	37	0	37
Negative	3	20	23
Total	40	20	60

1- Sensitivity = 92.5%

2- Specificity = 100%

Table (22): Correlation coefficient "r" between defensin and other variables before and after treatment among all septicemic cases.

Defensin / Other variables	Before treatment		After treatment	
	r	P	r	P
TPMNs	0.41686	< 0.05	0.9003	< 0.05
HSS	0.02286	> 0.05	0.06182	> 0.05
CRP	- 0.0878	> 0.05	- 0.11061	> 0.05
IL-6	0.4363	< 0.05	0.36265	< 0.05
Gram-negative septicemia	0.29126	> 0.05	-	-

Table (23): Correlation coefficient "r" between defensin and other variables before and after treatment in septicemic fullterm cases.

Defensin / Other variables	Before treatment		After treatment	
	r	P	r	P
TPMNs	0.31865	< 0.05	-0.05016	> 0.05
HSS	0.169242	> 0.05	0.19991	> 0.05
CRP	0.07013	> 0.05	- 0.16465	> 0.05
IL-6	0.34151	< 0.05	0.34806	< 0.05

Table (24): Correlation coefficient "r" between defensin and other variables before and after treatment in septicemic preterm cases.

Defensin / Other variables	Before treatment		After treatment	
	r	p	r	p
TPMNs	0.72503	< 0.05	0.10384	> 0.05
HSS	0.016787	> 0.05	0.018747	> 0.05
CRP	-0.02487	> 0.05	0.125176	> 0.05
IL-6	0.04527	> 0.05	0.09988	> 0.05

Table (25): Serum defensin (ug/ml) among septicemic neutruopenic and non-neutruopenic cases.

Studied groups / Defensin	1- septicemic neutruopenic cases (n = 14)	2- Septicemic non-neutruopenic cases (n = 20)	3- Health newborns (n = 20)
Range	180 – 68000	170-130.000	0 – 200
X	3965.26	58264.51	88.31
± SD	± 2012.4	± 41520.5	± 72.43
( )	(1*2)	(2*3)	(1*3)
T	3.71	5.85	4.52
P	< 0.05	< 0.001	< 0.001

N.B: According to HSS the neutropenia was suggested where absolute total neutrophils count < 1750 /mm^3 ***(Rodwell et al., 1988).***

Table (26): Correlation coefficient "r" between absolute neutrophils count in all septicemic cases (neutropinic and non-neutropenic cases) and other variables

Neutrophil count / Other variables	Neutropinic cases		Non-neutropinic cases	
	r	p	r	p
Defensin	0.2168	> 0.05	0.7301	< 0.05
IL-6	0.1872	> 0.05	0.1126	> 0.05
CRP	0.0621	> 0.05	0.0881	> 0.05

Table (27): Correlation coefficient "r" between absolute neutrophils count in septicemic preterms (neutropinic and non-neutropenic cases) and other variables

Neutrophil count / Other variables	Neutropinic preterms		Non-neutropinic preterms	
	r	p	r	p
Defensin	0.2713	> 0.05	0.4631	< 0.05
IL-6	0.1046	> 0.05	0.1002	> 0.05
CRP	0.0325	> 0.05	0.0615	> 0.05

Table (28): Comparison between the results of lab. investigations before and after treatment among septicemic fullterms .

Sample / Lab. Investigations	Before treatment		After treatment		Statistical test	
	X	± SD	X	± SD	Paired t	P
HSS	3.9	± 1.165	0.45	± 0.605	11.376	< 0.05
CRP	23.4	± 16.66	2.275	±13.181	5.695	<0.05
TPMNs	7936.25	±14633.8	3259.75	±1332.38	4.69	< 0.05
IL-6	1366.25	± 647.02	162.05	± 105.04	8.157	< 0.001
Defensin	6178.5	± 56700.31	265.5	± 270.11	4.767	< 0.001

Table (29): Comparison between the results of lab. investigations before and after treatment among septicemic preterms .

Sample / Lab. Investigations	Before treatment		After treatment		Statistical test	
	X	± SD	X	± SD	Paired t	P
HSS	4.4	± 0.503	0.55	± 0.681	22.134	< 0.001
CRP	31.85	± 20.866	3.275	± 5.03	6.305	< 0.05
TPMNs	4200	± 3281.17	3017	± 1118.71	3.926	< 0.05
IL-6	911.5	± 407.76	111.5	± 82.29	8.181	< 0.001
Defensin	9779	± 10404.59	66.25	± 61.88	4.177	< 0.05

Table (30): Comparison of the diagnostic value of the studied parameters in detection and exclusion of sepsis in the studied cases.

Statistical study / Investigations	Septicemic fullterms		Septicemic preterms	
	Sensitivity %	Specificity %	Sensitivity %	Specificity %
Defensin (HNP-1)	95%	100%	90%	100%
IL-6	95%	100%	85%	95%
CRP	90%	100%	75%	100%
HSS	85%	100%	60%	100%
TPMNs	90%	87%	81%	76%
I : T ration	82%	85%	70%	80%

FIGURE 1 : *GESTATIONAL AGE AMONG THE STUDIED GROUPS*

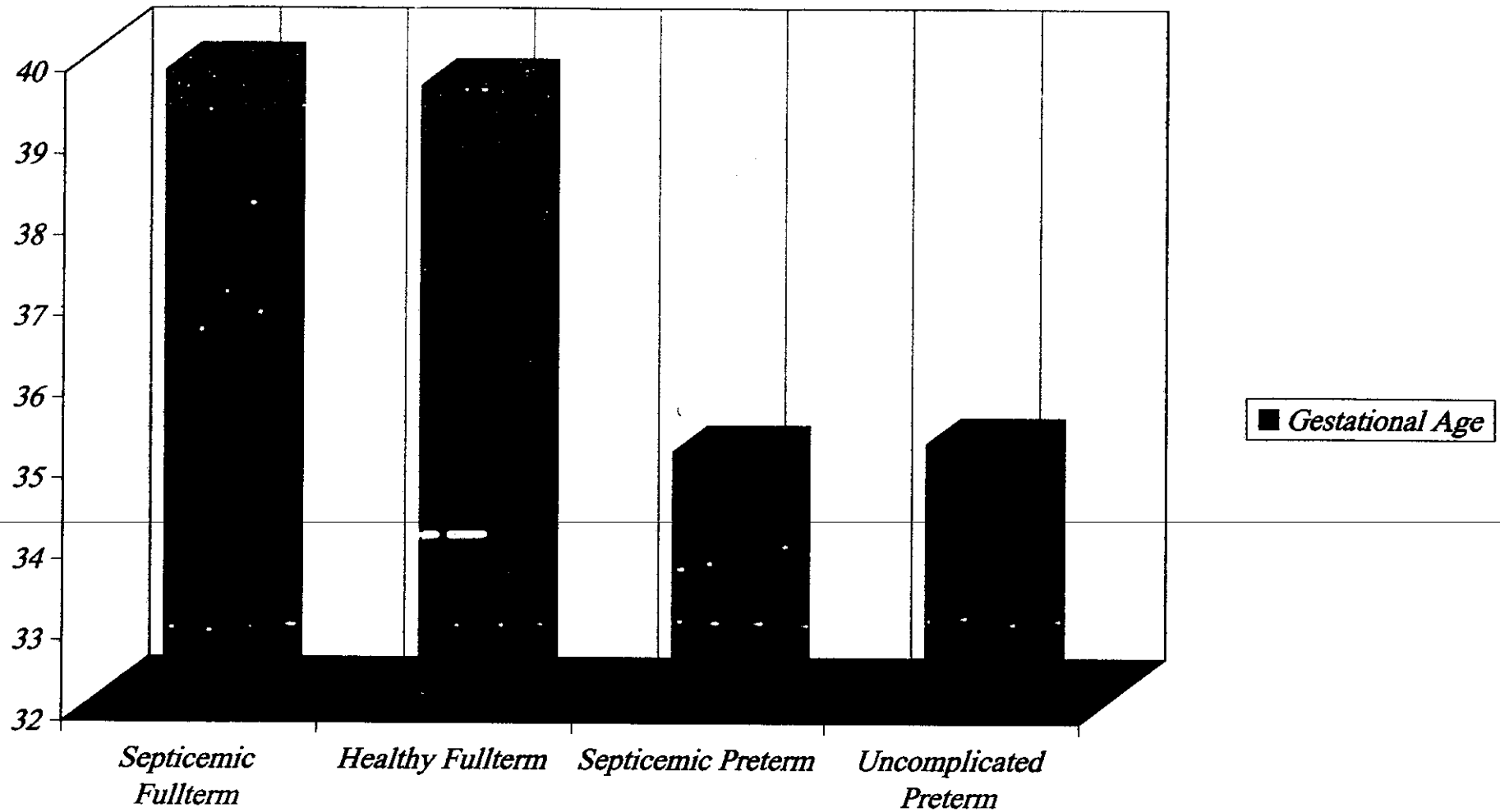


FIGURE 2 : SEX DISTRIBUTION AMONG THE STUDIED GROUPS

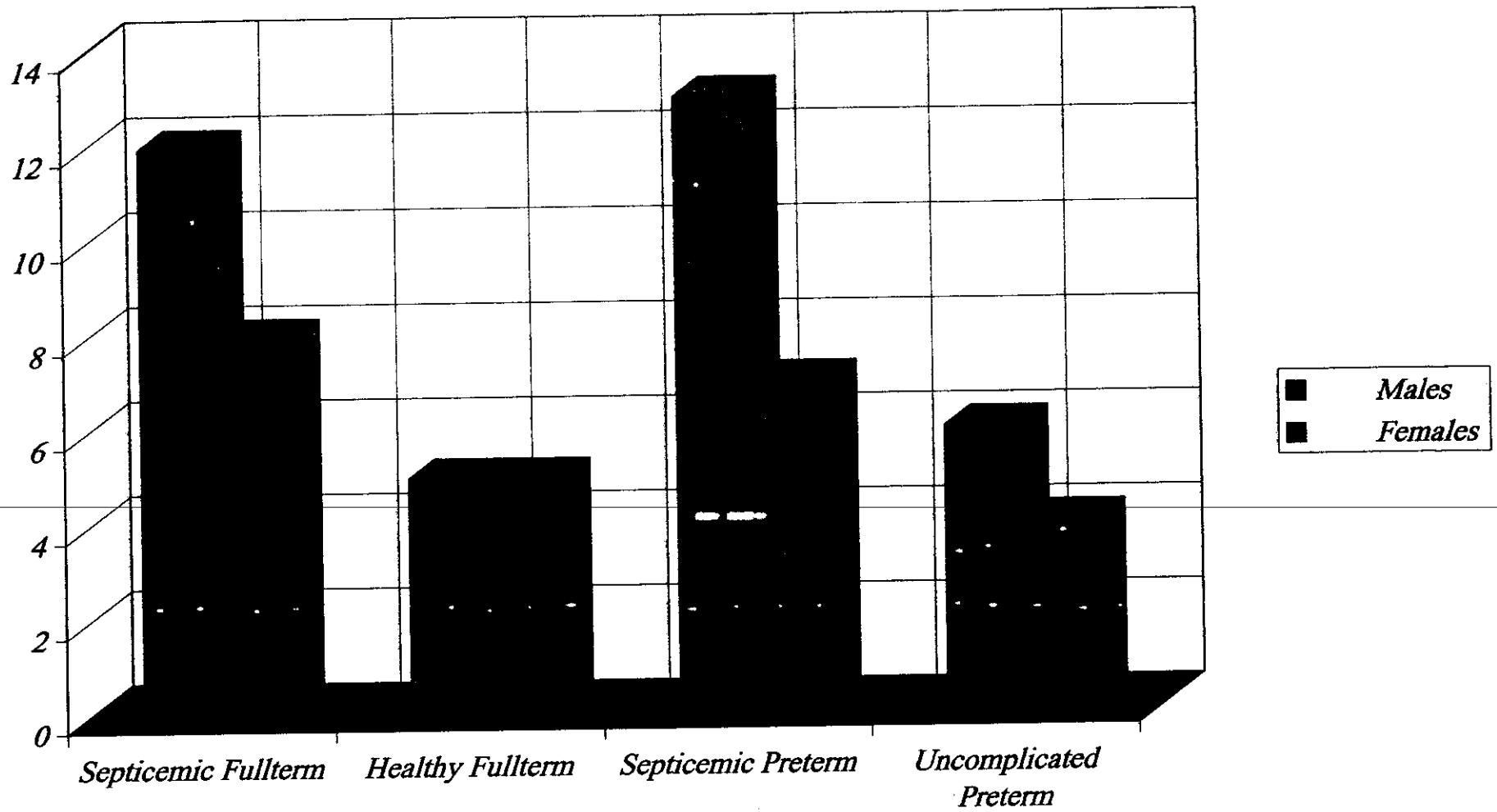


FIGURE 3 : BODY WEIGHT AMONG THE STUDIED GROUPS

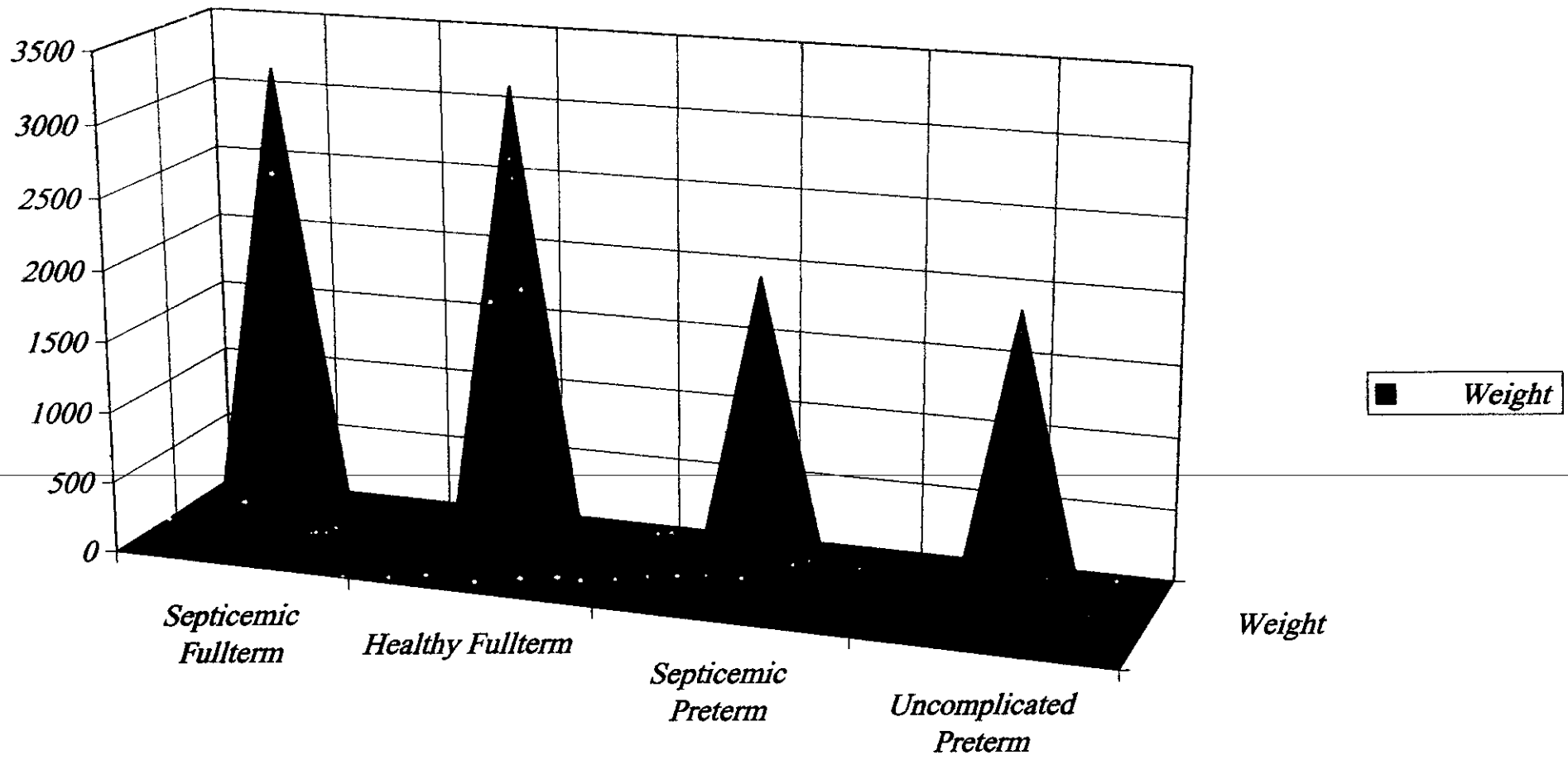


FIGURE 4 : CRP AMONG THE STUDIED GROUPS

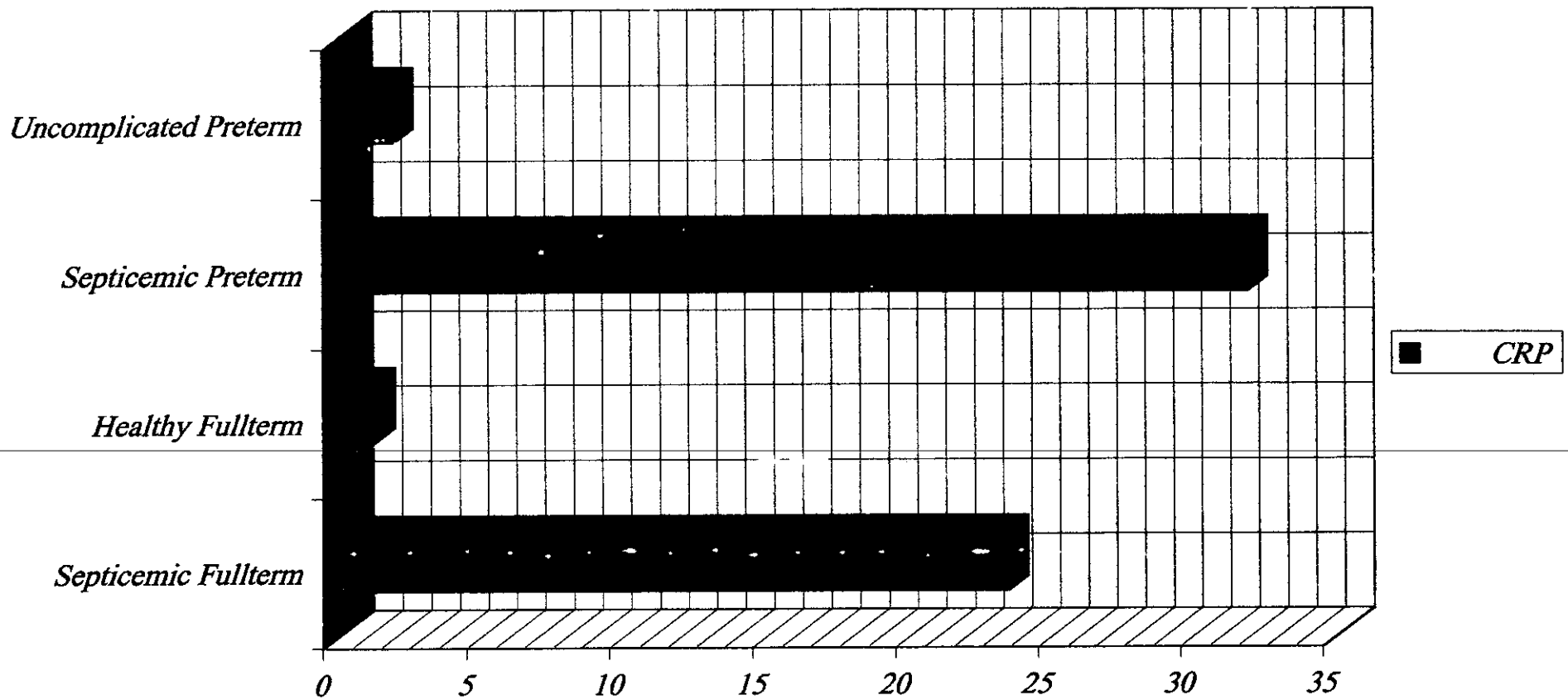


FIGURE 5 : HSS AMONG THE STUDIED GROUPS

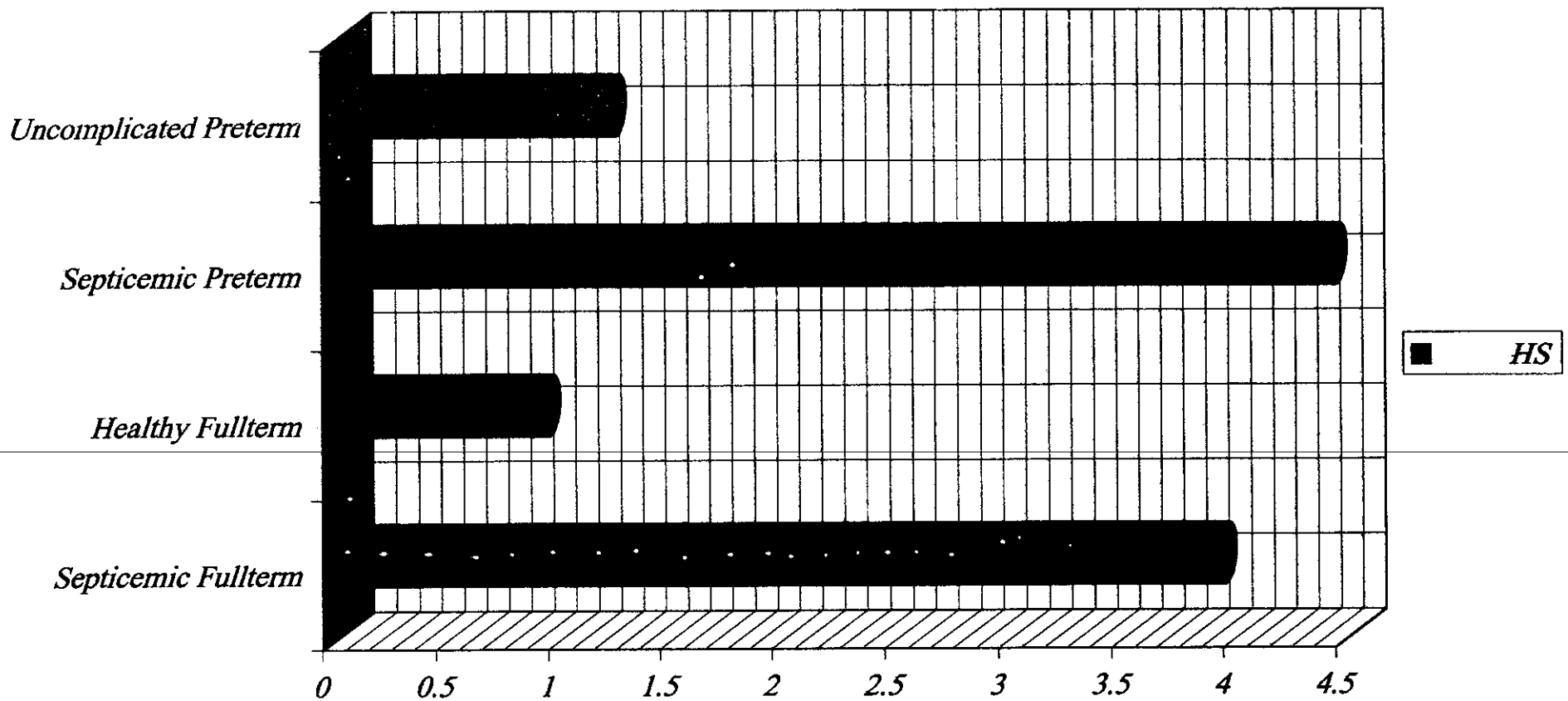


FIGURE 6 : MEAN SERUM IL - 6 AMONG THE STUDIED GROUP

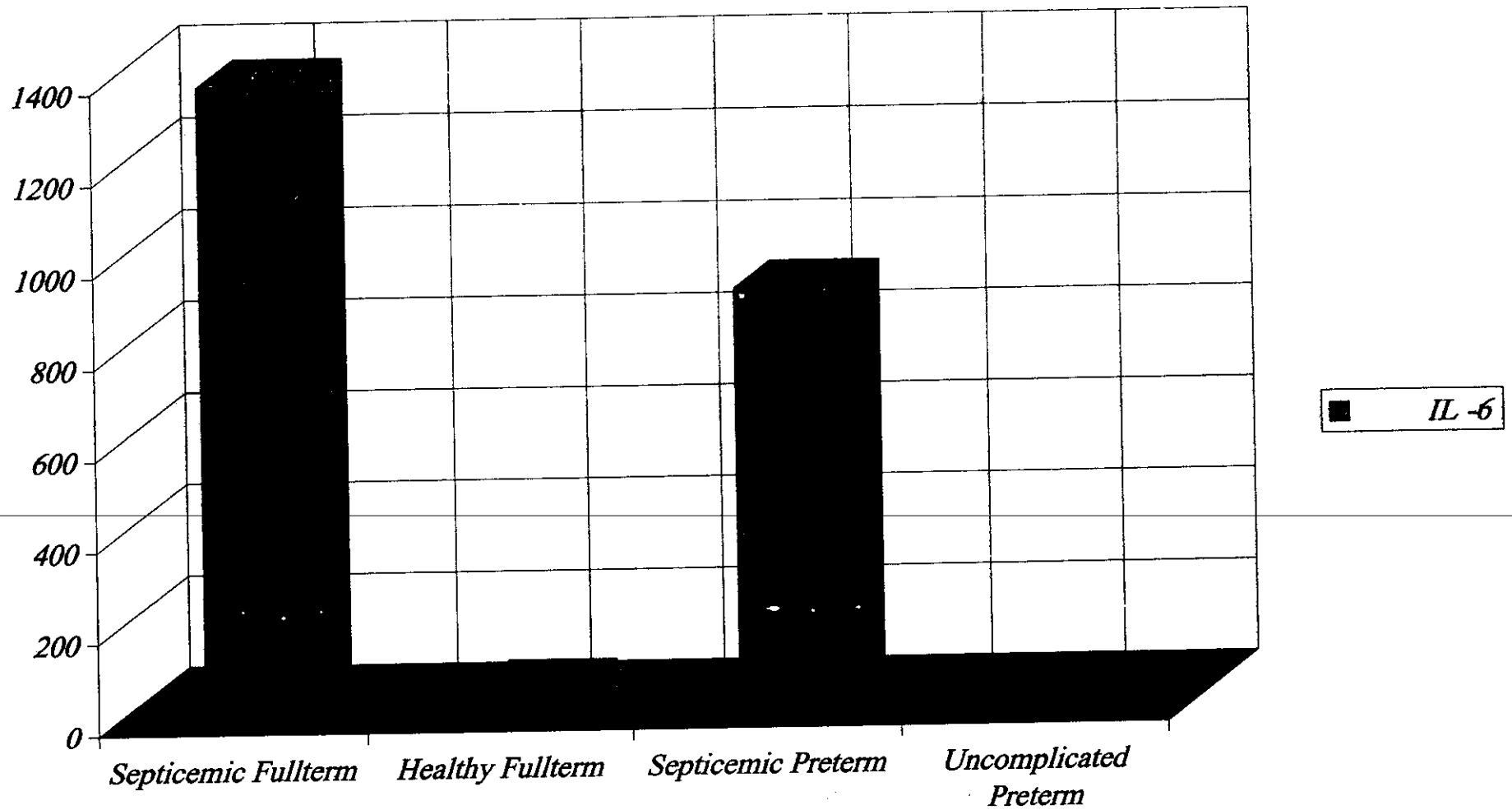


FIGURE 8 : MEAN SERUM DEFENSIN AMONG THE STUDIED GROUPS

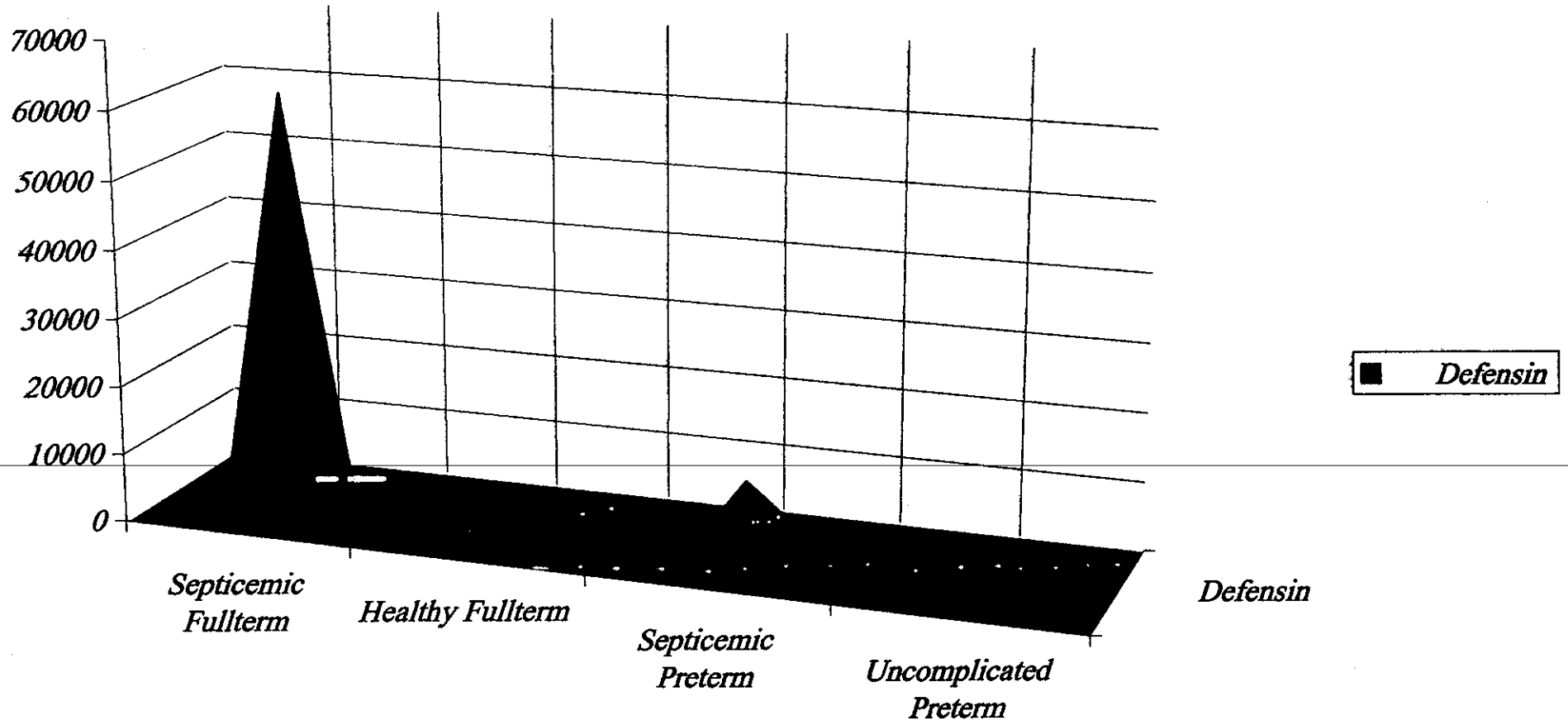
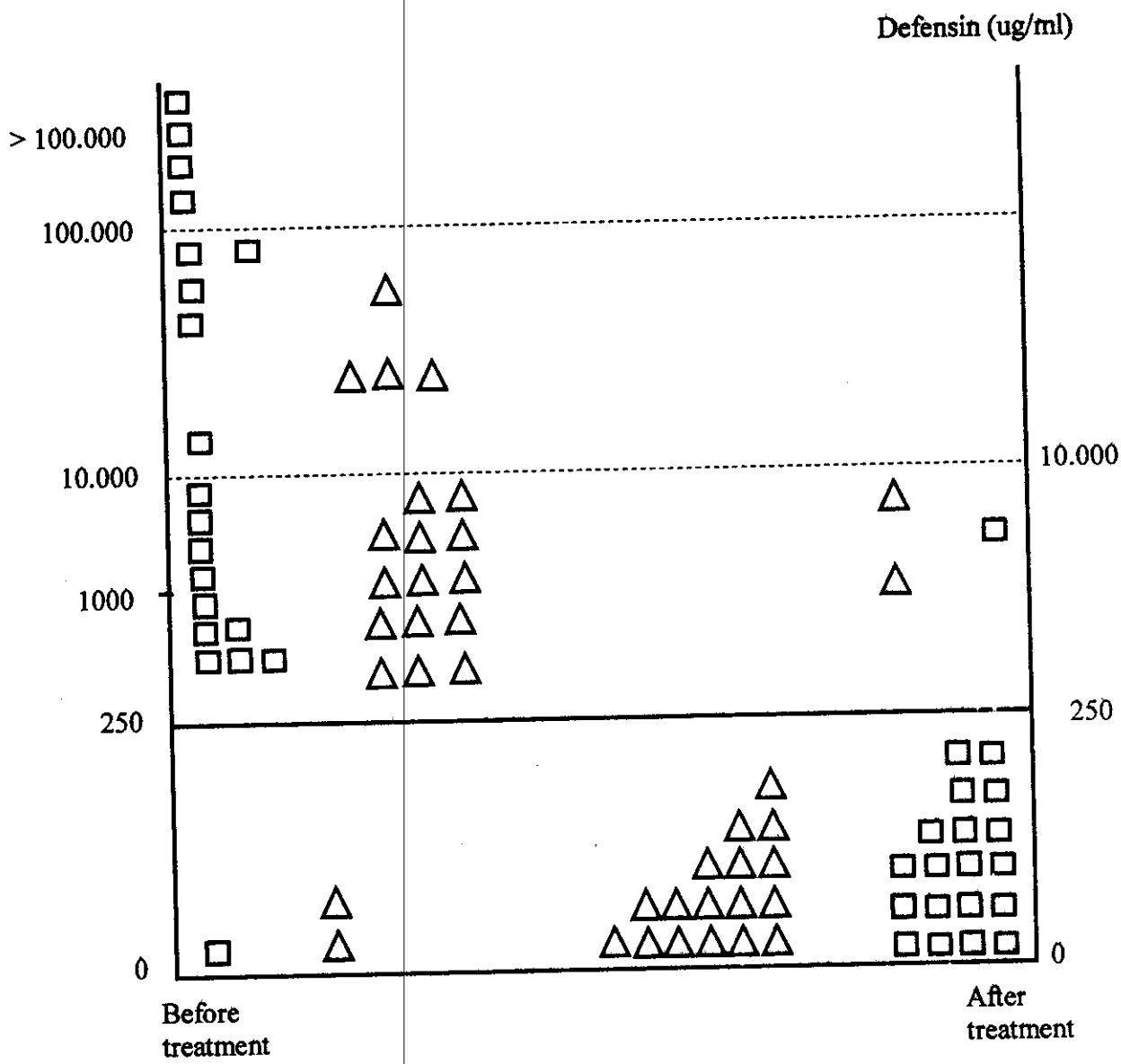


Figure (9)



Serum defensin levels in all septicemic cases.

before and after treatment

△ : Preterm

□ : Fullterm

FIGURE 10 : DIFFERENT PARAMETERS BEFORE & AFTER TREATMENT AMONG SEPT. FULLTERM GROUP