
Results

RESULTS

Table (1): Sex distribution of the three studied groups.

Variable	Groups						X^2	p	Significance@
	(I) P.I.H.		(II) PT		(III) FT				
	No.	%	No.	%	No.	%			
Male	22	55	4	40	5	50	4.68	>0.05	NS
Female	18	45	6	60	5	50			

(Theoretical X^2 = 5.99 (at $p<0.05$) & 9.21 (at $p<0.01$)

@ NS = X^2 non-significant

There is no significant difference in the gender of the three groups.

Table (2): Mode of delivery ratio of preterm neonates born to mothers with PIH and control groups.

Variable	Groups						X^2	p	Significance@
	(I) P.I.H.		(II) PT		(III) FT				
	No.	%	No.	%	No.	%			
CS	26	65 a	3	30 b	3	30 b	33.5	<0.01	**
NVD	14	35	7	70	7	70			

(Theoretical X^2 = 5.99 (at $p<0.05$) & 9.21 (at $p<0.01$)

@ ** = X^2 significant at $p<0.01$ level

There is highly significant increase in cesarean section deliveries among group I in comparison with control groups.

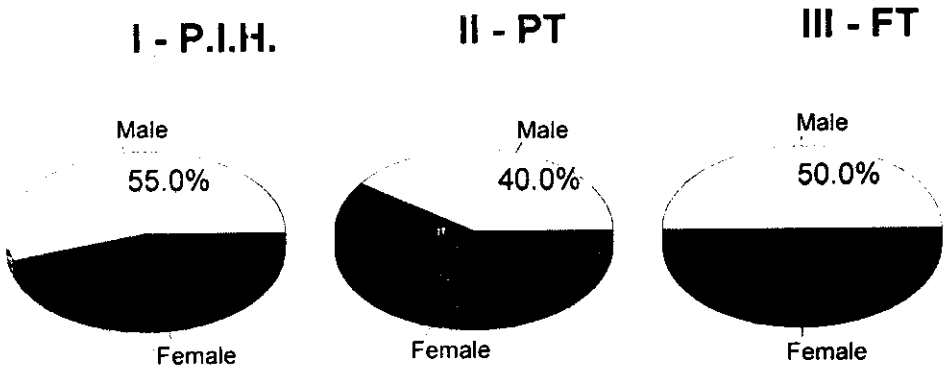

Fig. (1) : Sex distribution of the studied groups.

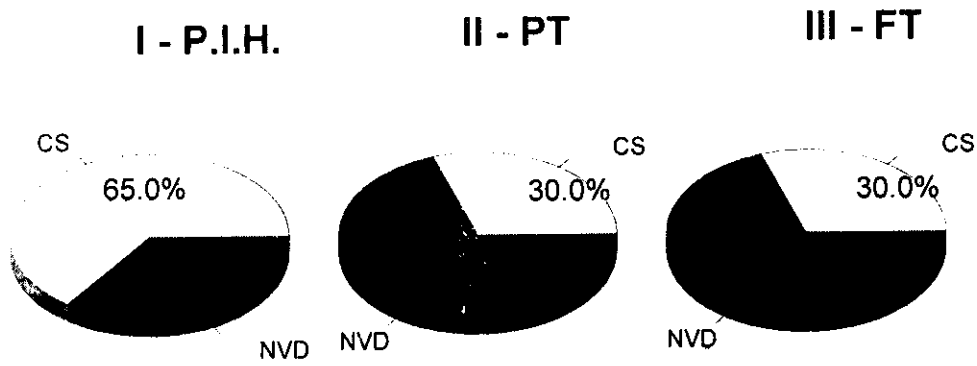

Fig. (2) : Mode of delivery of the studied groups

Table (3): The number and percent of VLBW in groups I & II.

Variable	Groups				X^2	p	Signifi-cance@
	(I) P.I.H.		(II) PT				
	No.	%	No.	%			
Very low birth weight	18	45	2	20	19.8	<0.01	**
Non-very low birth weight	22	55	8	80			

(Theoretical X^2 = 3.84 (at p<0.05) & 6.63 (at p<0.01)

@ ** = significant X^2 in distribution of birth weight at probability p<0.01

There is highly significant increase in the incidence of VLBW in group I in comparison with group II.

Table (4): The number and percent of SGA in groups I & II.

Variable	Groups				X^2	p	Significance@
	(I) P.I.H.		(II) PT				
	No.	%	No.	%			
SGA	14	35 a	1	10 b	17.8	<0.01	**
AGA	26	65	9	90			

(Theoretical X^2 = 3.84(at p<0.05) & 6.63 (at p<0.01)

@ ** = X^2 significant at p<0.01 level

There is highly significant increase in the incidence of SGA in group I in comparison with group II.

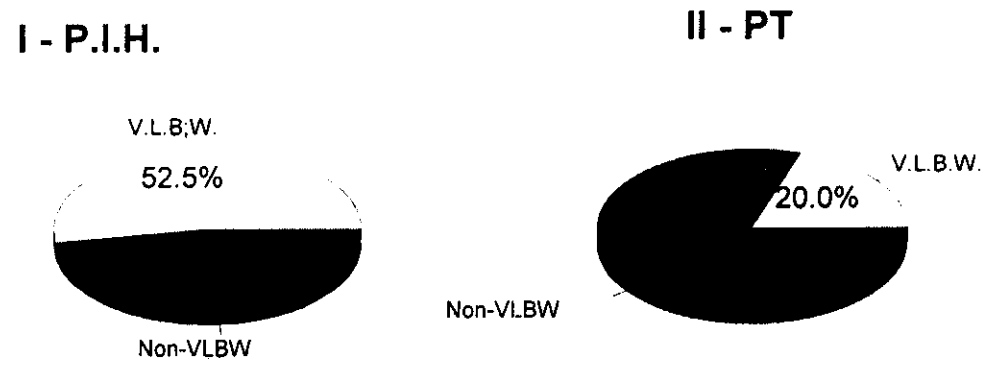

Fig. (3) : The incidence of VLBW in groups I & II.

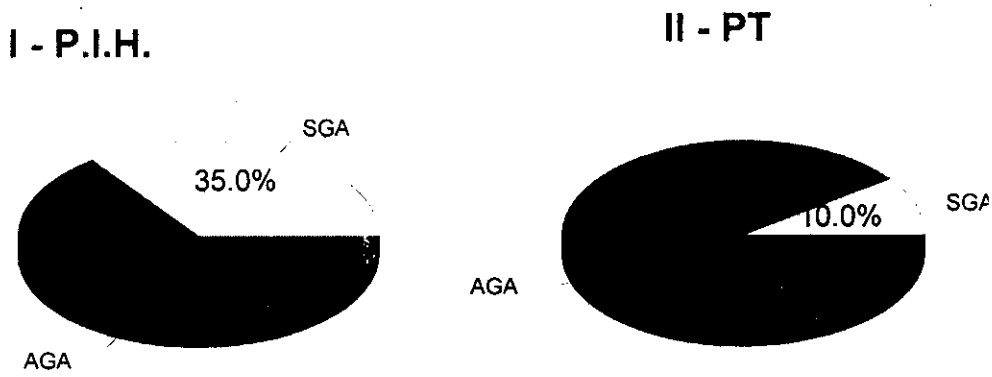

Fig. (4) : The incidence of SGA in groups I & II

Table (5): Comparison between the birth weight, and gestational age of the three studied groups.

Variable	Parameter	Groups			ANOVA		Signifi -cance
		(I) P.I.H.	(II) PT	(III) FT	F	p	
Weight (kg)	Mean	1.62 a	1.94 a	3.39 b	26.10	<0.01	**
	± SD	± 0.74	± 0.47	± 0.46			
	Range min.	0.60 –	1.0 –	2.70 -			
	Max.	3.10	2.50	4.20			
Gestational age (weeks)	Mean	32.35 a	32.60 a	39.10 b	26.66	<0.01	**
	± SD	± 2.86	± 2.72	± 1.29			
	Range min.	27.00 –	28.00 –	38.00 –			
	Max.	37.00	36.00	42.00			

Means followed by the same letter are not statistically different
@ ** = difference highly significant at p<0.01 level.
P = probability
F = variance ratio

There was no significant difference between group I and group II, regard the gestational age and birth weight.

There was highly significant increase in birth weight and gestational age of infants in group III when compared to those of infants in group I and II.

Table (6): Comparison between the SBP, and DBP of the mothers with PIH and the mothers of the control groups (II and III).

Variable	Parameter	Groups			ANOVA		Signifi -cance
		(I) P.I.H.	(II) PT	(III) FT	F	p	
Systolic Blood Pressure	Mean	173.75 a	117.50 b	121.50 b	74.45	<0.01	**
	± SD	± 18.35	± 11.84	± 8.51			
	Range min.	150 --	100 –	110 -			
	Max.	210	140	140			
Diastolic Blood Pressure	Mean	102.38 a	76.00 b	79.00 b	71.01	<0.01	**
	± SD	± 8.01	± 8.10	± 5.16			
	Range min.	95 –	65 –	70 –			
	Max.	120	90	85			

Means followed by the same letter are not statistically different
@ ** = difference highly significant at p<0.01 level.
P = probability
F = variance ratio

There is highly significant increase in both systolic and diastolic blood pressure in mothers with PIH in comparison with mothers of the control groups.

Table (7): Comparison between preterm neonates born to mothers with PIH and control groups as regard hemoglobin level, RBCs count and platelets count.

Variable	Parameter	Groups			ANOVA		Signifi -cance
		(I) P.I.H.	(II) PT	(III) FT	F	p	
Hb (g/dl)	Mean	15.59 a	13.78 b	14.66 ab	3.58	<0.05	*
	± SD	± 2.15	± 1.54	± 1.77			
	Range min.	10.90 –	11.00 -	12.20 –			
	Max.	19.50	16.50	17.00			
RBCs count ($x 10^6/\mu l$)	Mean	4.65 a	4.19 b	4.39 ab	2.90	>0.05	*
	± SD	± 0.64	± 0.344	± 0.48			
	Range min.	3.20 –	3.75 –	3.80 –			
	Max.	6.00	4.80	5.20			
Platelets count ($x 10^3/\mu l$)	Mean	187.10 a	203.30 a	203.50 a	0.36	>0.05	NS
	± SD	± 65.64	± 76.69	± 79.06			
	Range min.	79.00 –	120.00 –	155.00 –			
	Max.	330.00	340.00	320.00			

Means followed by the same letter are not statistically different
@ NS = difference non-significant,
* = difference significant at p<0.05 level,
P = probability
F = variance ratio

There is significant increase in hemoglobin level and RBCs count among group I in comparison to group II, but no significant difference between group I and group III or between group III and group II.

There was no significant difference between the 3 studied groups as regard the platelets count.

Table (8): Comparison between the three studied groups as regard TLC, ANC, and lymphocytic count.

Variable	Parameter	Groups#			ANOVA		Signifi-cance@
		(I) P.I.H.	(II) PT	(III) FT	F	p	
Total leucocytic count (x 10^3/μL)	Mean	7.6 0a	10.48 b	13.31 b	8.63	<0.01	**
	± SD	± 3.92	± 5.90	± 3.48			
	Range min.	1.90 –	2.75 -	7.9 –			
	Max.	18.00	20.00	19.00			
Absolute neutrophilic count (x 10^3/μL)	Mean	3.40 a	5.38 b	7.266 b	10.81	<0.01	**
	± SD	± 2.24	± 3.47	± 2.27			
	Range min.	0.60 –	0.90 –	2.80 –			
	Max.	8.00	11.00	10.06			
Lymphocytic count (x 10^3/μL)	Mean	3.62 a	4.82 ab	5.21 b	3.67	<0.05	*
	± SD	± 0.1.82	± 2.33	± 1.75			
	Range min.	1.10 –	1.75 –	3.20 –			
	Max.	9.80	8.90	9.00			

Means followed by the same letter are not statistically different
@ * = difference significant at p<0.05 level,
** = difference highly significant at p<0.01 level.
P = probability
F = variance ratio

There is significant decrease in TLC and ANC among group I in comparison to the control groups but no significant difference as regard lymphocytic count between group I and group II.

There is no significant difference in TLC, ANC or lymphocytic count between group II and group III.

Table (9): Comparison between G-CSF levels and GM-CSF levels in the three studied groups.

Variable	Parameter	Groups#			ANOVA		Signifi-cance@
		(I) P.I.H.	(II) PT	(III) FT	F	p	
G-CSF (pg/ml)	Mean ± SD Range min. Max.	73.90 a ± 72.11 4.20 – 385.10	346.79 b ± 230.91 27.90 - 751.00	486.80 c ± 252.84 180.00 – 942.00	37.78	<0.01	**
GM-CSF (pg/ml)	Mean ± SD Range min. Max.	2.53 a ± 2.49 0.48 – 12.12	7.96 b ± 6.36 3.19 – 20.25	11.59 b ± 8.92 2.29 – 30.03	16.53	<0.01	**

Means followed by the same letter are not statistically different
@ ** = difference highly significant at p<0.01 level.
P = probability
F = variance ratio

There is highly significant decrease in G-CSF levels in group I in comparison to group II and group III also there is significant decrease in G-CSF levels in group II in comparison to group III.

There is highly significant decrease in GM-CSF levels in group I in comparison to group II and group III but no significant difference between GM-CSF levels of group II and group III.

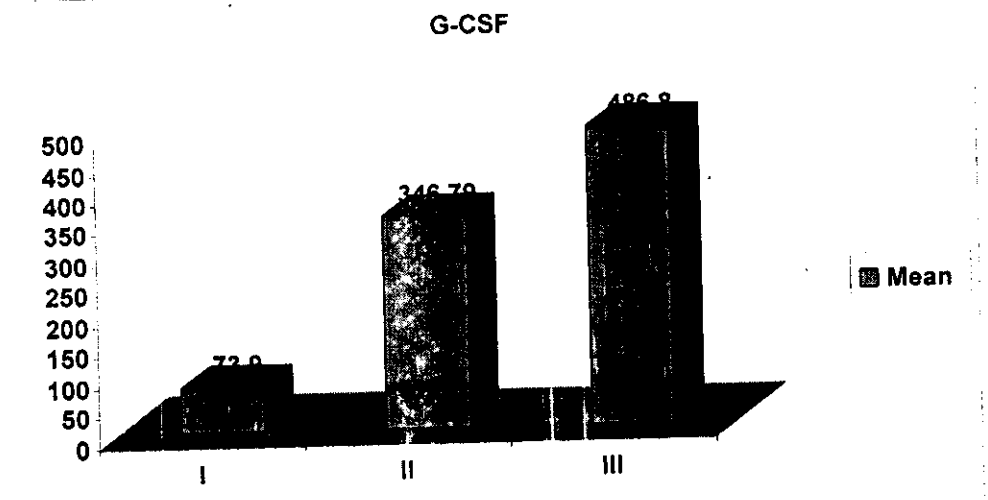

Fig. (5) : Comparison between G-CSF levels in the three studied groups.

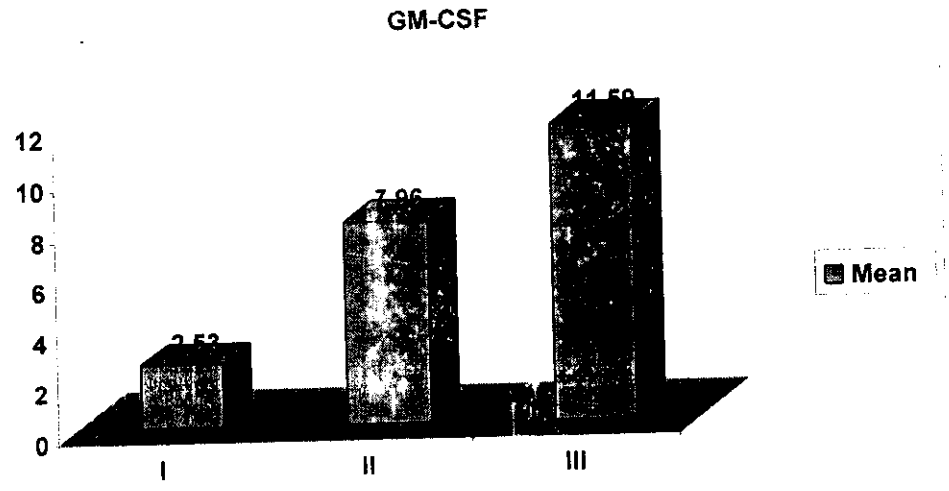

Fig. (6) : Comparison between GM-CSF levels in the three studied groups.

Table (10): The relation between TLC, ANC, and levels of GM-CSF and G-CSF in preterm neonates in group I and their gestational age.

	Gestational age groups			F	p	Signi-ficance
	≤30 weeks n=12	30 - ≤34 weeks n=18	>34 weeks n=10			
TLC - Mean - + S.D.	4.36 a +2.02	7.52 b +3.60	10.85 c +3.38	79.11	<0.01	**
ANC - mean - + S.D.	1.63 a +0.97	3.45 b +2.02	5.36 c 2.12	53.25	<0.01	**
GMCSF - mean - + S.D.	1.36 a +0.81	2.62 ab +2.51	3.77 b +3.08	16.55	<0.01	**
GCSF - mean - + S.D.	37.82 a +28.29	72.36 ab +86.44	119.95 b +57.86	18.46	<0.01	**

NS = not significant (p>0.05).

* = significant at p<0.05 level.

** = significant at p<0.01 level.

P = probability.

There was significant increase in TLC, ANC, and the levels of GM-CSF and G-CSF as the gestational age increases.

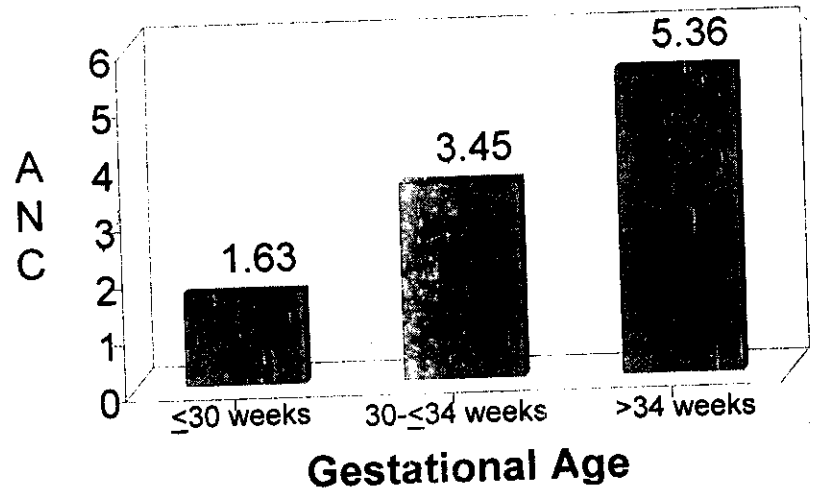

Fig. (7) : The relation between ANC and the gestational age in perterm neonates in group I

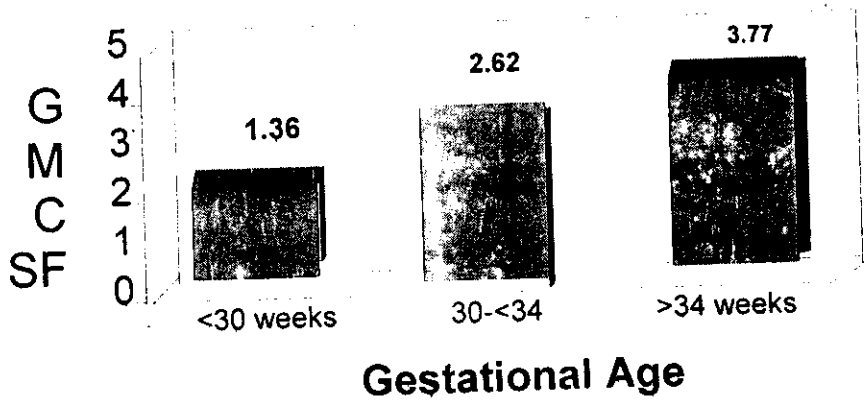

Fig. (8) : The relation between GMCSF level and the gestational age in preterm neonates in group I

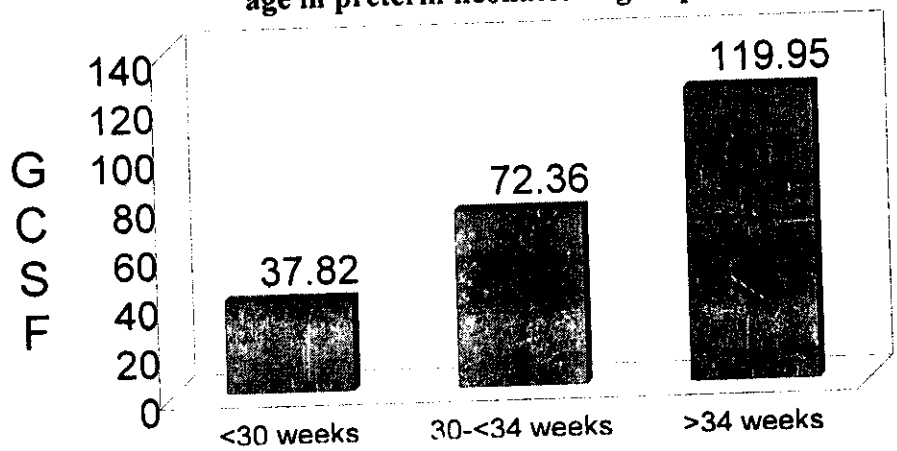

Fig. (9) : The relation between GCSF level and the gestational age in preterm neonates in group I

Table (11): The relation between the TLC, ANC, and GM-CSF and G-CSF levels in preterm neonates in group I and their birth weight.

	Body weight groups				F	p	Signi-ficance
	<1.0 kg n=9	1.0-1.5 kg n=11	>1.5 – 2.0 kg n=11	>2.0 kg n=9			
TLC							
- mean	3.61 a	6.30 b	8.85 c	11.67 d	19.34	<0.01	**
- + S.D.	+1.33	+2.58	+2.88	+3.16			
ANC							
- mean	1.31 a	3.08 b	3.90 b	5.84 c	15.40	<0.01	**
- + S.D.	+0.67	+1.68	+1.97	+1.69			
GMCSF							
- mean	1.23 a	1.74 a	3.03 ab	4.35 b	3.82	<0.05	*
- + S.D.	+0.83	+0.93	+3.16	+2.95			
GCSF							
- mean	28.45 a	58.49 ab	92.01 bc	126.05 c	4.44	<0.01	**
- + S.D.	+27.00	+38.40	+102.60	+55.27			

NS = not significant (p>0.05).

* = significant at p<0.05 level.

** = significant at p<0.01 level.

P = probability.

There was significant increase in TLC, ANC, and the levels of GM-CSF and G-CSF, as the birth weight increases.

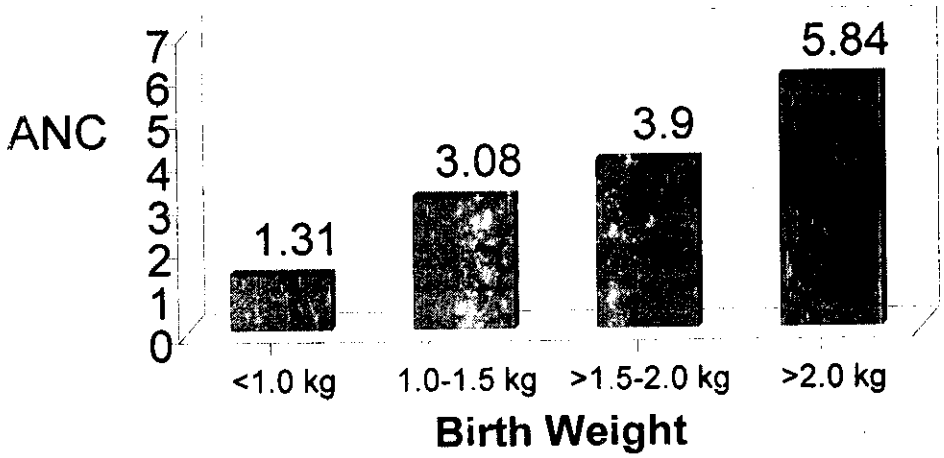

Fig.(10) : The relation between ANC and the birth weight of preterm neonates in group I.

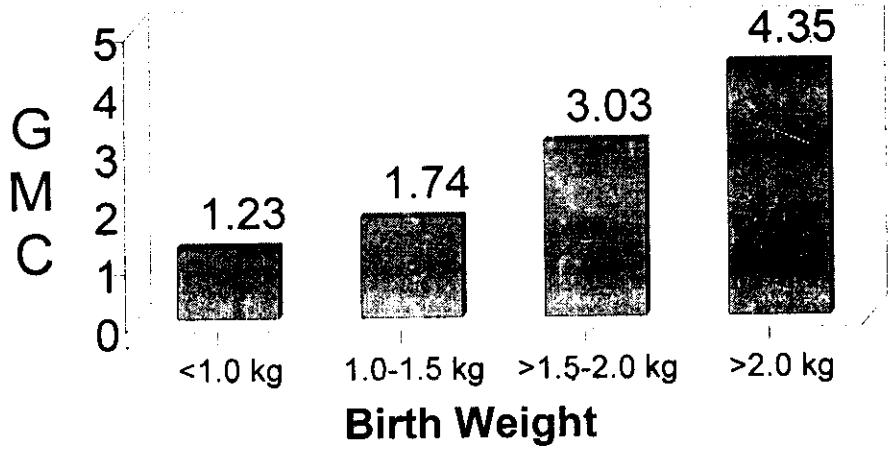

Fig.(11) : The relation between GM-CSF level and the birth weight of the preterm neonates in group I.

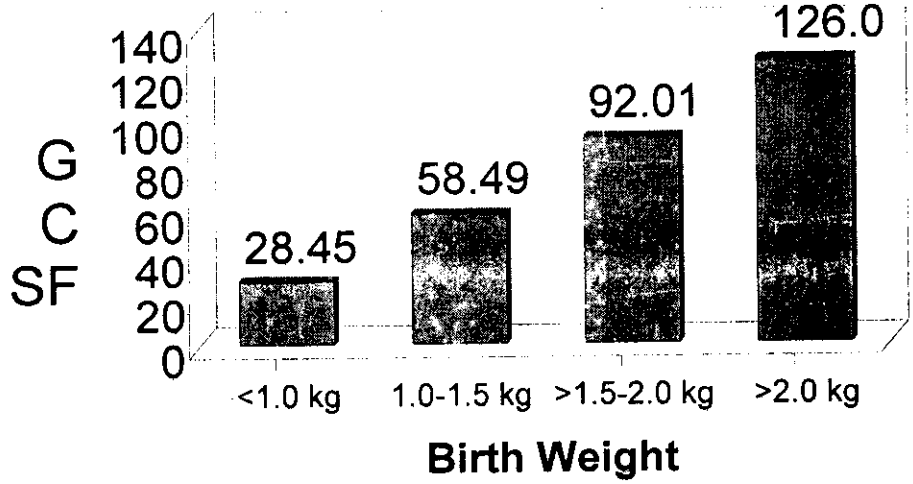

Fig.(12) : the relation between G-CSF level and the birth weight of preterm neonates in group I.

Table (12): Comparison of G-CSF among groups with different clinical characteristics in groups I & II.

	Case numbers	G-CSF (pg/ml)	Student 't'	p	Signifi-cance
Sex (M/F)	26/24	123.8±178.8/133.5.±144.0	0.21	>0.05	NS
GA (≤32/>32)	20/30	68.66±93.12/168.35±185.06	2.51	<0.05	*
VLBW (+/ -)	20/30	48.23±49.05/181.97±187.24	3.73	<0.01	**
SGA (+/-)	15/35	51.34±53.93/161.53±180.60	3.28	<0.05	*
Neutropenia (+/-)	16/34	27.29±23.82/176.09±176.47	3.21	<0.01	**
PIH (+/-)	40/10	73.9±72.11/346.8±230.6	3.70	<0.01	**

Theoretical 't' with 48 degrees of freedom at p<0.05 & <0.01 levels = 2.021 & 2.704

NS = not significant (p>0.05).

* = significant at p<0.05 level.

** = significant at p<0.01 level.

P = probability.

There is highly significant decrease in the G-CSF levels in preterm neonates with neutropenia, VLBW, and who born to hypertensive mothers.

There is significant decrease in the G-CSF levels preterm neonates with gestational age less than 32 weeks, and SGA.

Table (13): Comparison of GM-CSF among groups with different clinical characteristics in groups I & II.

	Case numbers	GMCSF (pg/ml)	Student 't'	p	Signifi-cance
Sex (M/F)	26/24	2.74±2.64/4.55±5.22	1.52	>0.05	NS
GA (≤32/>32)	20/30	2.25±2.60/4.53±4.73	2.19	<0.05	*
VLBW (+/-)	20/30	1.72±1.23/4.88±4.88	3.39	<0.01	**
SGA (+/-)	15/35	1.70±1.19/4.43±4.67	3.22	<0.01	**
Neutropenia (+/-)	16/34	1.30±0.88/4.70±4.61	2.14	<0.05	*
PIH (+/-)	40/10	2.53±2.48/7.97±6.36	2.65	<0.05	*

Theoretical 't' with 38-48 degrees of freedom at $p<0.05$ & <0.01 levels = 2.021 & 2.704

NS = not significant ($p>0.05$).

* = significant at $p<0.05$ level.

** = significant at $p<0.01$ level.

P = probability.

There is highly significant decrease in the GM-CSF levels in preterm neonates who are VLBW, and SGA.

There is significant decrease in the GM-CSF levels in preterm neonates with neutropenia, gestational age less than 32 weeks, and who are born to mothers with PIH.

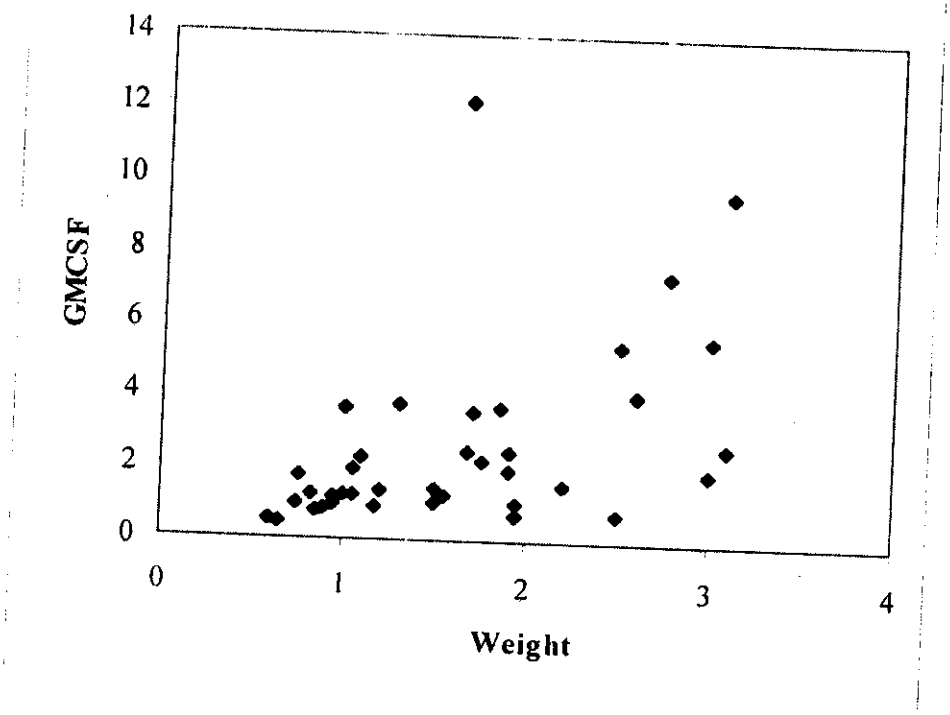

Fig. (20) : Scattrogram represents the correlation between GM-CSF levels and birth weight in preterm neonates in group I

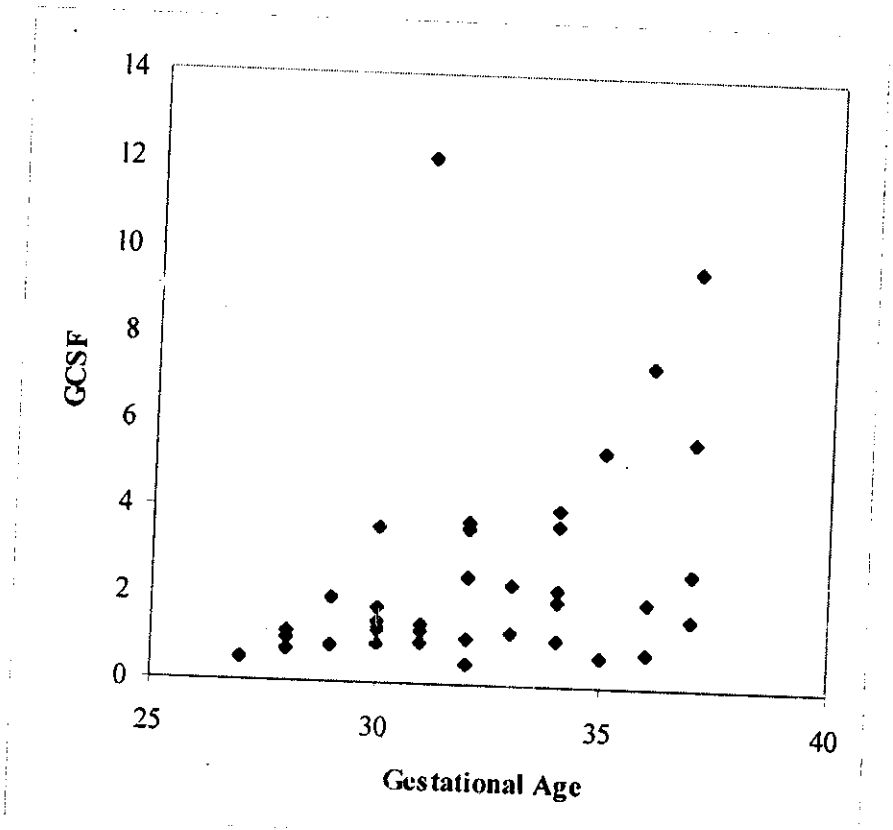

Fig. (21) : Scattogram represents the correlation between GCSF level and gestational age of the preterm neonates in group I.

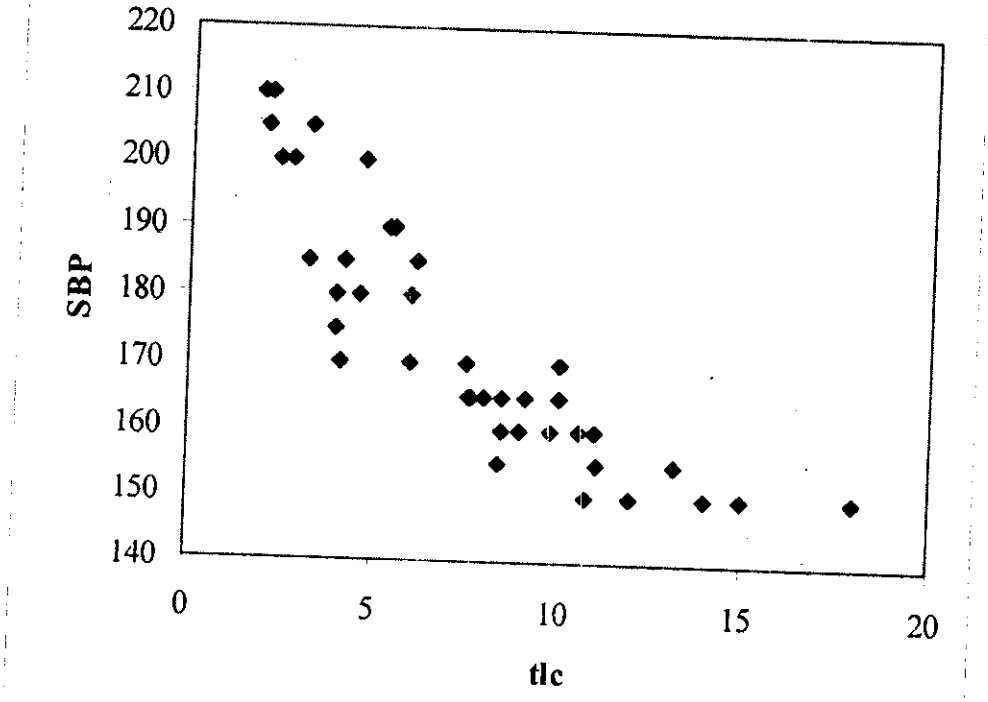

Fig. (22) : Scattrogram represents the correlation between TLC of preterm neonates in group I and the SBP of their mothers.

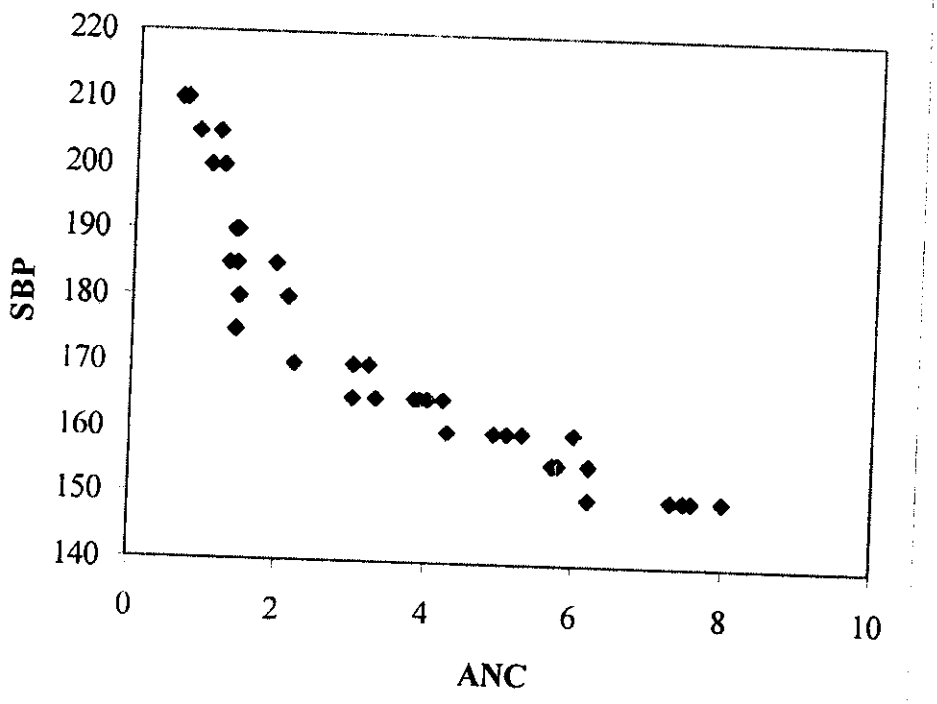

Fig. (23) : Scattrogram represents the correlation between ANC of the preterm neonates in group I and SBP of their mothers.

Table (20): Correlation between SBP of the mothers of preterm neonates in group I, and the variables of their neonates.

Variables	'r' value	p	significance
Weight (kg)	-0.697	0.001	**
Gestational age (weeks)	-0.580	0.001	**
H.B (g/dl)	-0.030	0.853	NS
RBCs x 10^6/µl)	0.058	0.722	NS
Platelet (x 10^3/µl)	-0.557	0.001	**
TLC (x 10^3/µl)	-0.875	0.001	**
A.N.C. (x 10^3/µl)	-0.907	0.001	**
Lymphocytic count (x 10^3/µl)	-0.678	0.001	**
GMCSF	-0.596	0.001	**
GCSF	-0.731	0.001	**

NS = not significant (p>0.05).
** = significant at p<0.01 level.
P = probability.

Table (21): Correlation between DBP of the mothers of preterm neonates in group I, and the variables of their neonates.

Variables	'r' value	p	significance
Weight (kg)	-0.618	0.001	**
Gestational age (weeks)	-0.508	0.001	**
H.B (g/dl)	-0.138	0.394	NS
RBCs x 10^6/µl)	0.044	0.787	NS
Platelet (x 10^3/µl)	-0.496	0.001	**
TLC (x 10^3/µl)	-0.783	0.001	**
A.N.C. (x 10^3/µl)	-0.801	0.001	**
Lymphocytic count (x 10^3/µl)	-0.601	0.001	**
GMCSF	-0.511	0.001	**
GCSF	-0.632	0.001	**

NS = not significant (p>0.05).
** = significant at p<0.01 level.
P = probability.

There is highly significant negative correlation between both of SBP and DBP, and all the studied variables of the preterm neonates except for Hb level and RBCs count, there was non significant positive correlation.

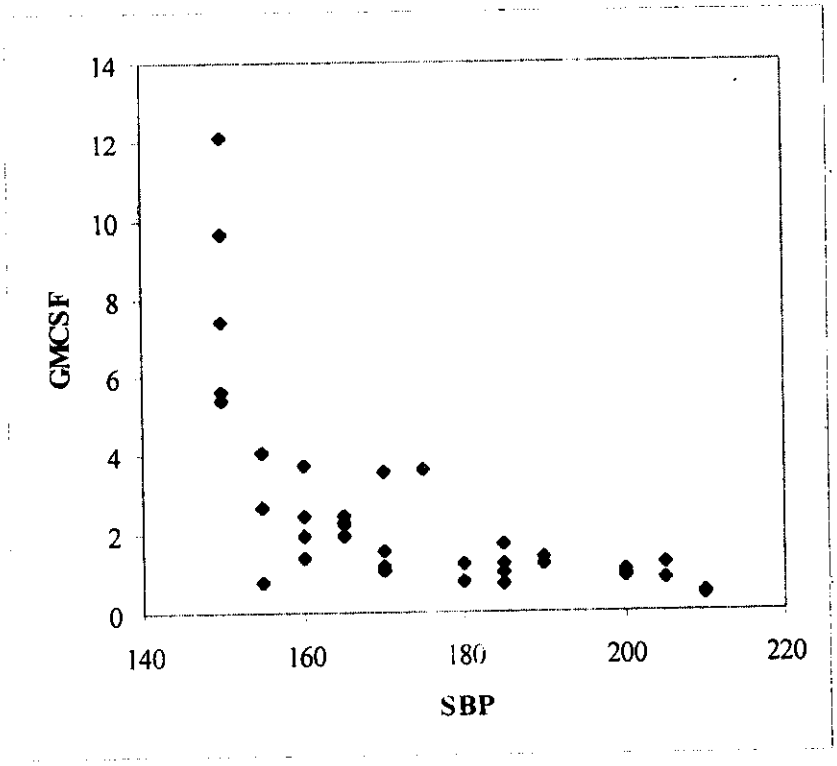

Fig. (24) : Scattrogram represents the correlation between the SBP of the mothers in group I and GM-CSF level of their preterm neonates.

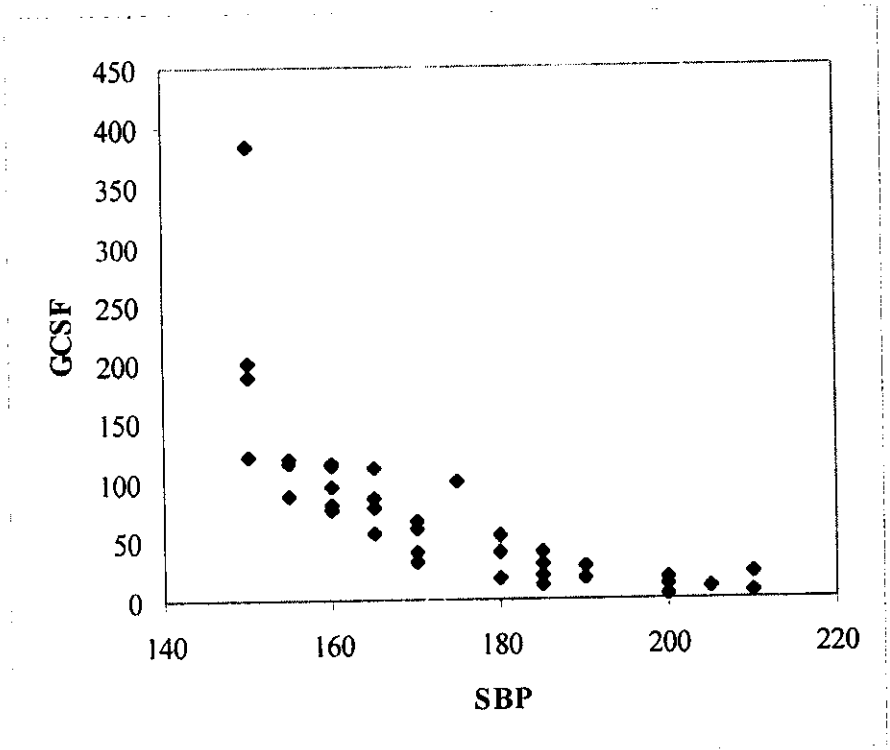

Fig. (25) : Scattrogram represents the correlation between SBP of the mothers in group I and G-CSF level of their preterm neonates.