Results

Results of this study are illustrated by the following tables and figures:

Table (4): Demographic data of the studied cases .

Group	No.	Gender		Gestational age (wk)	Weight (g)	APGAR 1 min	APGAR 5 min
		F	M				
Patients with RDS	17	10	7	32 (29-37)	1350 (900-2900)	5 (4-6)	7 (5-7)
Control full term	20	12	8	39.50 (37-41)	3300 (2800-3850)	9 (8-10)	10 (9-10)
Control Preterm	20	11	9	32 (29-36)	2100 (950-3050)	8 (7-10)	9.5 (9-10)

Data are shown as media (minimum – maximum)

This table showed decrease in gestational age, weight and APGAR score in patients and preterm control groups more than in the full term group.

Table (5) : Clinical and laboratory parameters of the studied patients.

	Patients with RDS n = 17
Gestational age (wk)	31 ± 1.968
Weight (g)	1402.94 ± 531.64
APGAR 1st min	4.72 ± 0.8
APGAR 5th min	6.34 ± 0.6
Hemoglobin (Hb) in g/dl	12.75 ± 1.79
Total leucocytic count ×1000	14.3± 3.83707
Platelets ×1000	287.176 ± 107.39951
PH	7.16 ± 3.34
PCO_2 in mmHg	50.46 ± 2.43
Base excess	2.91 ± 1.65
Protein Z before recovery (ng/ml)	0.50294 ± 0.39665
Protein Z after recovery (ng/ml)	1.59412 ± 0.59421

Data are shown as mean ± standard deviation.

This table showed the clinical and laboratory parameters of the patients group during their illness along with protein Z level before and after recovery.

Table (6) : Control full term &control preterm groups parameters.

	Control full term	Control Preterm
Gestational age (wk)	39.1± 1.16529	31.95± 2.35025
Weight (g)	3247.5± 321.78572	1925± 580.9475
APGAR 1st min	8.92 ± 0.7	8.33± 0.67
APGAR 5th min	9.7 ± 0.3	9.31 ± 0.5
Protein Z (ng/ml)	1.1575± 0.56691	0.765± 0.46823

This table showed decrease in control preterm group regarding gestational age, weight, APGAR score and protein Z more than in control full terms.

Table (7) : Comparison between both sexes in patients with RDS as regards gestational age, weight, APGAR score , hemoglobin, platelets count, total leucocytic count , pH, PCO_2, base excess and protein Z before and after recovery.

	Males n = 7	Females n = 10	t value	(P)
Gestational age (wk)	31.5 ± 5.04	31.37 ± 4.356	- 0.056	0.952
Weight (gm)	1498.5 ± 636.4	1375± 482.0385	0.568	0.740
APGAR 1	4.76 ± 0.88	4.7 ± 0.774	- 0.148	0.962
APGAR 5	6.3± 0.519	6.37 ± 0.696	- 0.225	0.740
Hemoglobin (gm/dl)	11.47 ± 4.91	13.58 ± 1.73	- 1.427	0.225
Platelets×1000	273.92 ± 75.11	296.11 ± 124.75	-0 .418	0.673
TLC×1000	14.22 ± 3.95	15.68 ± 4.52	- 0.688	0.740
PH	7.17± 2.08	7.16 ± 2.06	0.665	0.516
PCO_2 mmHg	49.86 ± 2.29	50.88 ± 2.54	- 0.847	0.411
Base excess	2.22 ± 1.55	3.39 ± 0.97	- 1.922	0.133
Protein Z before recovery ng/ml	0.529 ± 0.581	0.646 ± 0.312	-0.539	0.161
Protein Z after recovery ng/ml	1.51 ± 0.577	1.693 ± 0.644	- 0.6	0.536

This table revealed no significant difference between males and females as regards the descriptive data, CBC, blood gases and protein Z ($p > 0.05$).

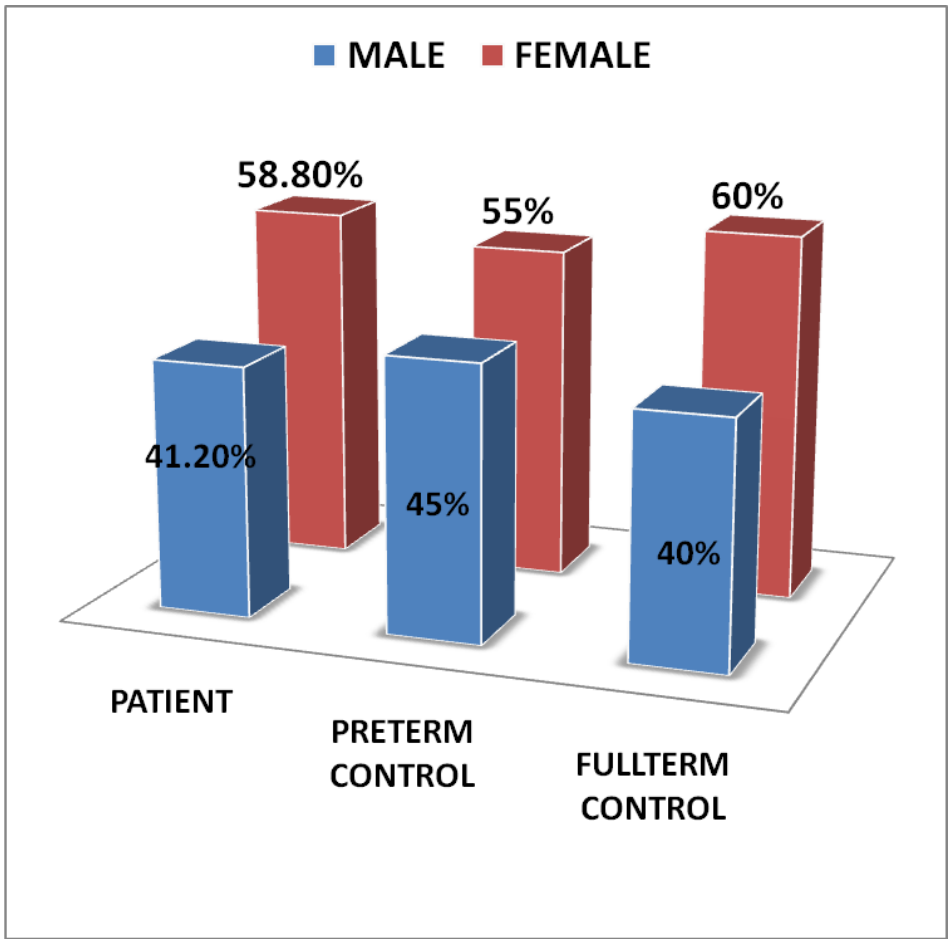

Fig. 16. Male to female ratio in the studied groups.

This figure showed increase in the female ratio in all the studied groups.

Table (8) : Comparison between Patients & control preterm as regards gestational age , weight, APGAR1, APGAR 5 and protein Z .

Variable	Patients	Control Preterm	t value	(P)
Gestational age	**31.43 ± 2.01**	**32.3 ± 2.41**	**-1.1686**	**0.442**
Weight	**1394.46 ± 617.96**	**1901.9± 702.41**	**-2.3129**	**0.013**
APGAR 1	**4.72 ± 0.8**	**8.33± 0.67**	**-14.943**	**000**
APGAR 5	**6.34 ± 0.6**	**9.31 ± 0.5**	**-16.429**	**000**
Protein Z before	0.50294 ± 0.39665	0.765± 0.46823	**- 1.748**	**0.62**

This table revealed significant decrease in weight, APGAR1, APGAR 5, in patient group compared to control preterm .Also, no significant difference in gestational age or protein Z was obtained between these two groups .

Table (9): Comparison between control full terms & control preterms as regards gestational age, weight, APGAR 1, APGAR 5 and protein Z .

Variable	Control full term	Control preterm	t value	(P)
Gestational age	**38.67± 1.078**	**32.3 ± 2.41**	**- 10.79**	**0.00**
Weight	**3281.86± 315.48**	**1901.9± 702.41**	**- 8.014**	**0.00**
APGAR 1	**8.92 ± 0.7**	**8.33± 0.67**	**- 2.723**	**0.017**
APGAR 5	**9.7 ± 0.3**	**9.31 ± 0.5**	**- 2.991**	**0.030**
Protein Z	1.1575± 0.56691	0.765± 0.46823	**- 2.279**	**0.020**

This table revealed high significant decrease in gestational age, weight, APGAR 1, APGAR 5 and protein Z in control preterms compared to control full term .

Table (10) : Correlations of protein Z with gestational age, weight, APGAR 1, APGAR 5 in control full term group.

Variable		GA	WT	APG1	APG5
Protein Z	R	0.091	0.320	-0.183	-0.131
	P	0.704	0.169	0.440	0.581

This table shows no significant correlations between protein Z in the control full terms group and between gestational age, weight, APGAR 1 and APGAR 5.

Table (12) : Correlations of protein Z with gestational age, weight, APGAR 1, APGAR 5 in control preterms group.

Variable		GA	WT	APG1	APG5
Protein Z	R	0.011	0.155	-0.245	0.017
	P	0.963	0.513	0.297	0.942

This table shows no significant correlation between protein Z and gestational age, weight, APGAR 1 and APGAR 5.

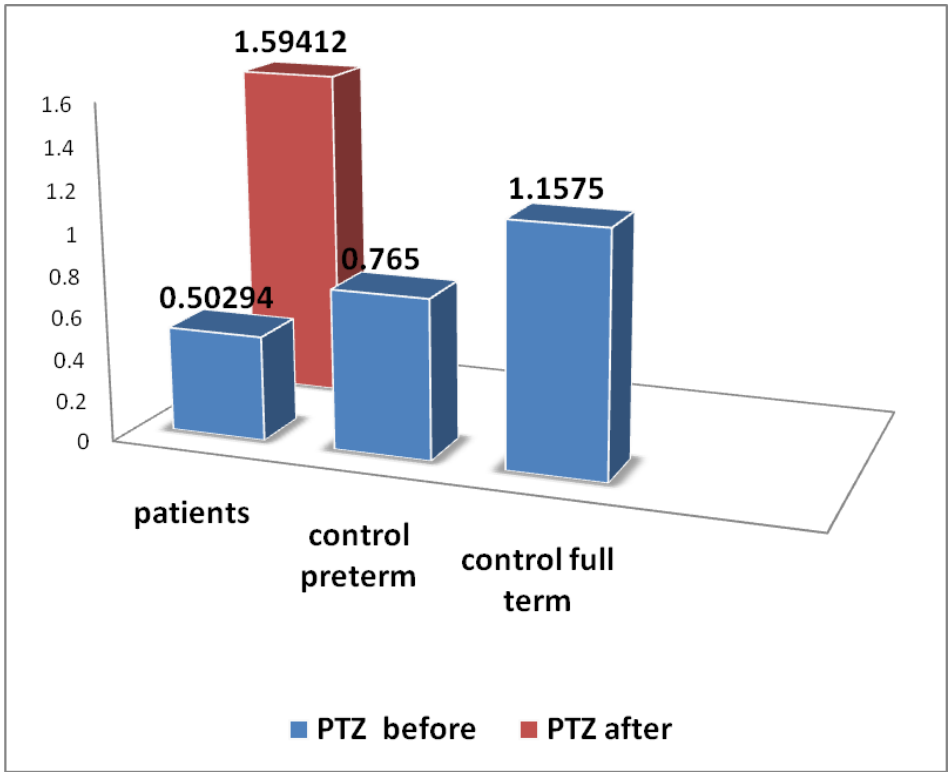

Fig. 17. Mean Protein Z levels (ng/ml) in each group included in the study.

This figure showed increase in protein Z levels in patients group after their recovery .

Table (12) : Comparison between patients on CPAP to patients on IMV as regards gestational age, weight, APGAR 1, APGAR 5, hemoglobin %, platelets count, total leucocytic count pH, PCO_2, base excess and protein Z before and after recovery.

Variable	CPAP n = 10	IMV n = 7	t value	(P)
Gestational age	30.98 ± 1.04	32 ± 2.98	- 1.009	.887
Weight	1223.52 ± 442	1321 ± 779.11	0.3297	.669
APGAR 1	4.9± 0.921	4.65 ± 0.51	0.6479	.417
APGAR 5	6.47± 0.68	6.16± 0.48	1.0347	.270
Hb %	11.96 ± 3.94	13.79 ± 2.47	1.0831	.296
TLC	15.18 ± 4.05	15.02 ± 4.81	0.0743	.962
PLAT	288.15 ± 109.36	286.27 ± 106.81	0.0352	.972
PH	7.174 ± 2.807	7.178 ± 4.239	- .233	.819
PCO_2	50.29 ± 7.73	50.69 ± 3.23	0.1283	.746
BE	3.3 ± 1.53	2.35 ± 1.75	1.1888	.230
Protein Z before	0.578± 0.346	0.626 ± 0.56	0.2193	.962
Protein Z after	1.626 ± 0.627	1.646 ± 0.632	0.0645	.813

[Hemoglobin (Hb) %, platelets count (plat), total leucocytic count (TLC), Base exess (BE)]

This table revealed no significant difference between both subgroups in all the previous parameters.

Table (13) : Comparison of protein Z before and after recovery in patients group with RDS:

Variable	Before	After	t value	(P)
Protein Z	0.50294 ± 0.39665	1.59412 ± 0.59421	**5.7194**	**0.000**

This table revealed significant increase in Protein Z levels in newborns patients who developed RDS after their recovery.

Table (14) Correlation of protein Z levels after recovery in patients with RDS to its levels in control preterm group.

Variable	Patients	Control Preterm	t value	(P)
Protein Z	1.59412 ± 0.59421	0.765± 0.46823	**4.3391**	**0.000**

This table revealed a significant difference in protein Z levels after recovery in patients with RDS to its levels in control preterms.

Table (15) : Correlations of protein Z before and after recovery with gestational age, weight, APGAR 1, APGAR 5, hemoglobin %, total leucocytic counts, platelets counts, PH and PCO2 in patients with RDS.

Variable		GA.	Wt.	APG 1	APG 5	Hb	TLC	PLAT	PH	PCO_2
Protein Z before	R	- .055	.004	- .285	- .307	.503	.029	- .466	-.394	.349
	P	.833	.987	- 267	.231	0.39	.914	0.05	.117	.170
Protein Z after	R	- .130	- .266	.069	.136	.301	.180	-.038	-.314	.252
	P	.618	.302	.792	.602	.241	.886	.886	.220	.329

[gestational age (GA), weight (Wt), APGAR1 (APG1), APGAR5 (APG5), hemoglobin % (Hb %), total leucocytic counts (TLC), platelets counts (PLAT)]

N.B.: Negative results = negative correlation.
Positive results = positive correlation.

This table shows significant negative correlation between protein Z before recovery and platelets count in patients . Yet no significant correlations was found between protein Z before and after recovery and any of these parameters: gestational age, weight, APGAR 1, APGAR 5, TLC, hemoglobin, pH, PCO_2.

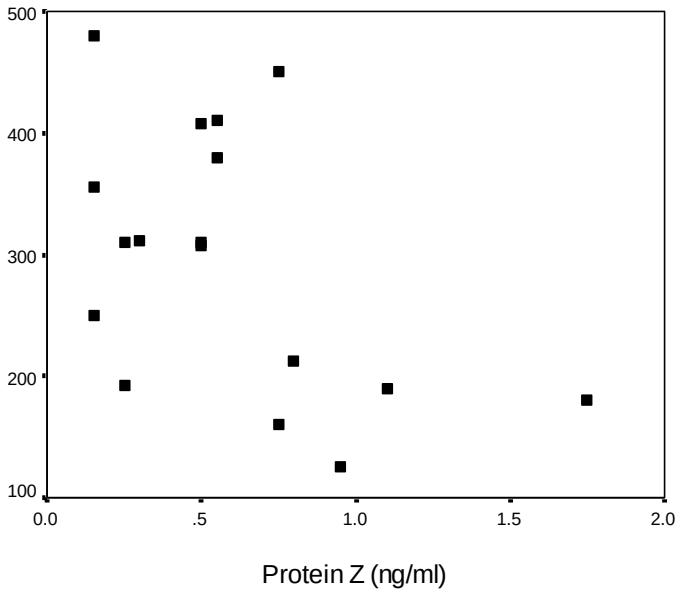

Fig. 18. The correlation between protein Z before recovery and platelets counts in patients group.

This figure showed negative correlation between protein Z before recovery and platelets count in patients group.