RESULTS

Results.

Results of this thesis are represented in 40 tables and 15 figures .

In some tables , the starting number of cases (n) decreased later on at the 72,96 hours of age readings . This was because some cases cured or expired during the clinical follow - up .

Table (1) : Population characteristics of infants enrolled in this study .

	Cases of IRDS (n = 80)						Control group (n = 28)			
	Cases received surfactant (n = 56)				Cases not received surfactant (n = 24)		Preterm group (n= 12)		Full-term group (n = 16)	
	Single dose (n = 28)		Multiple doses (n = 28)							
Gestation (weeks)	M	30.5	M	29.5	M	33.5	M	34.1	M	39.4
	SD	3.1	SD	3.3	SD	1.5	SD	1.2	SD	0.8
Weight (grams)	M	1383.1	M	1249.1	M	1896.2	M	2095.0	M	3175.0
	SD	451.8	SD	453.2	SD	375	SD	294.5	SD	281.4
Delivery (c.s. / s.v.d.)	5/23		7/21		2/22		0/12		3/13	
1 min.Apgar score	M	4.8	M	4.3	M	6.1	M	7.7	M	8.2
	SD	2.0	SD	1.6	SD	1.7	SD	1.5	SD	0.6
5 min.Apgar score	M	7.1	M	6.3	M	7.9	M	9.2	M	9.7
	SD	1.5	SD	2.0	SD	1.4	SD	0.9	SD	0.4
Sex Male / Female	17/11		18/10		17/7		5/7		8/8	
Multiple gestation	2		3		0		1		0	

Table (2) : Intrapartum factors* considered to be deterimental to the fetus .=

Factors	No.	%
Five minutes Apgar Score <= 6	27	33%
Intrapartum bleeding	10	12%
Breech delivery <= 33 Wks.	11	13%
Twins delivered vaginally <= 33 Wks.	4	5%
Maternal hypotension	1	12/1000

= Some subjects had more than one factor .

* Intrapartum factors were choosen according to the study of Singer et al., 1976 .

Table (3) : Mean and SD of cord blood alpha - 1 - antitrypsin level in preterm controls and full-term controls .

	Preterm control group (n = 12)		Full - term control group (n = 16)	
Cord blood alpha - 1 - antitrypsin level (mg / dl)	M	356.6	M	378.2
	SD	61.0	SD	164.9
t	0.431			
p	> 0.05 ∴ NS			

Table (4) : Mean and SD of cord blood alpha - 1 - antitrypsin level in preterm controls and cases of IRDS .

	Preterm control group (n = 12)		Cases of IRDS (n = 80)	
Cord blood α_1 - AT level (mg / dl)	M	356.6	M	195.8
	SD	61.0	SD	85.8
t	6.244			
p	< 0.001 ∴ V.H.S.			

Table (5) : Mean and SD of cord blood α_1- AT level in cases delivered by cesarian section and cases delivered by spontaneous vaginal delivery .

	Cases delivered by C.S. (n = 14)		Cases delivered by S.V.D. (n = 66)	
Cord blood α_1- AT (mg / dl)	M	238.4	M	186.7
	SD	131.7	SD	70.8
t	2.09			
p	< 0.05 ∴ S.			

Table (6) : Follow up of serum level of α_1-AT in preterm controls , cases of mild RDS (grades I and II) and cases of severe RDS (grades III and IV).

	Cord blood level (mg / dl)		72 hrs. of age level (mg / dl)		96 hrs. of age level (mg / dl)		F	P
Preterm control (n) =	M	356.6	M	344	M	370.4	0.195	> 0.05 ∴NS
	SD	61.0	SD	79.0	SD	79.0		
	12		12		12			
Mild RDS (n) =	M	178.4	M	255.6	M	233.5	14.81	< 0.001 ∴VHS
	SD	63.1	SD	68.5	SD	69.9		
	43		41		41			
Severe RDS (n) =	M	216.0	M	289.4	M	253.6	5.45	< 0.01 ∴H.S.
	SD	103.6	SD	82.3	SD	81.1		
	37		31		32			
F	22.297		6.66		11.223			
P	< 0.001 ∴V.H.S.		< 0.01 ∴H.S.		< 0.001 ∴V.H.S.			

Table (7) : Cord blood α_1- AT level as a prognostic test .

	Living cases (n = 63)		Cases which eventually died (n = 17)	
Cord blood α_1- AT level (mg / dl)	M	197.1	M	191.0
	SD	84.4	SD	93.6
t	0.257			
p	> 0.05 ∴ N. S.			

Table (8) : Mean and SD of cord blood α_1- AT level in cases with intrapartum factors * and cases without intrapartum factors .

	Cases with intrapartum factors (n = 36)		Cases without intrapatum factors (n = 44)	
Cord blood α_1- AT level (mg / dl)	M	206.7	M	176.2
	SD	89.9	SD	66.0
t	1.709			
p	< 0.05 ∴ S.			

* Intrapartum factors = 5 minutes Apgar score < 6 , intrapartum bleeding breech < 33 , vaginal twins < 33 weeks' gestation and maternal hypotension (Singer et al. , 1976).

Table (9) : Mean and SD of cord blood α_1- AT level in cases with gestational age < 30 weeks and cases > 30 weeks .

	Cases < 30 weeks (n = 34)		Cases > 30 weeks (n = 46)	
Cord blood α_1- AT level (mg / dl)	M	189.1	M	200.7
	SD	88.5	SD	84.5
t	0.591			
p	> 0.05 ∴ N.S.			

Table (10) : Mean and SD of α_1- AT in cord blood , 72 and 96 hours of age in the cases treated with surfactant and cases treated without .

	Cord blood α_1- AT (mg / dl)		72 hrs. of age level (mg / dl)		96 hrs. of age level (mg / dl)		F	P
cases treated with (n) =	M	252.5	M	293.6	M	276.5	2.948	> 0.05 ∴N.S.
	SD	130	SD	82.4	SD	82.4		
	56		49		49			
cases treated without(n)=	M	199.3	M	272.6	M	245.9	4.689	< 0.05 ∴S.
	SD	92.9	SD	72.4	SD	82.5		
	24		23		24			
t	0.237		0.207		0.278			
p	> 0.05 ∴N.S.		> 0.05 ∴N.S.		> 0.05 ∴N.S.			

FIG. 1 FOLLOW UP OF ALPHA1-AT AT BIRTH, 72, 96 HRS OF AGE FOR STUDY & CONT GROUP

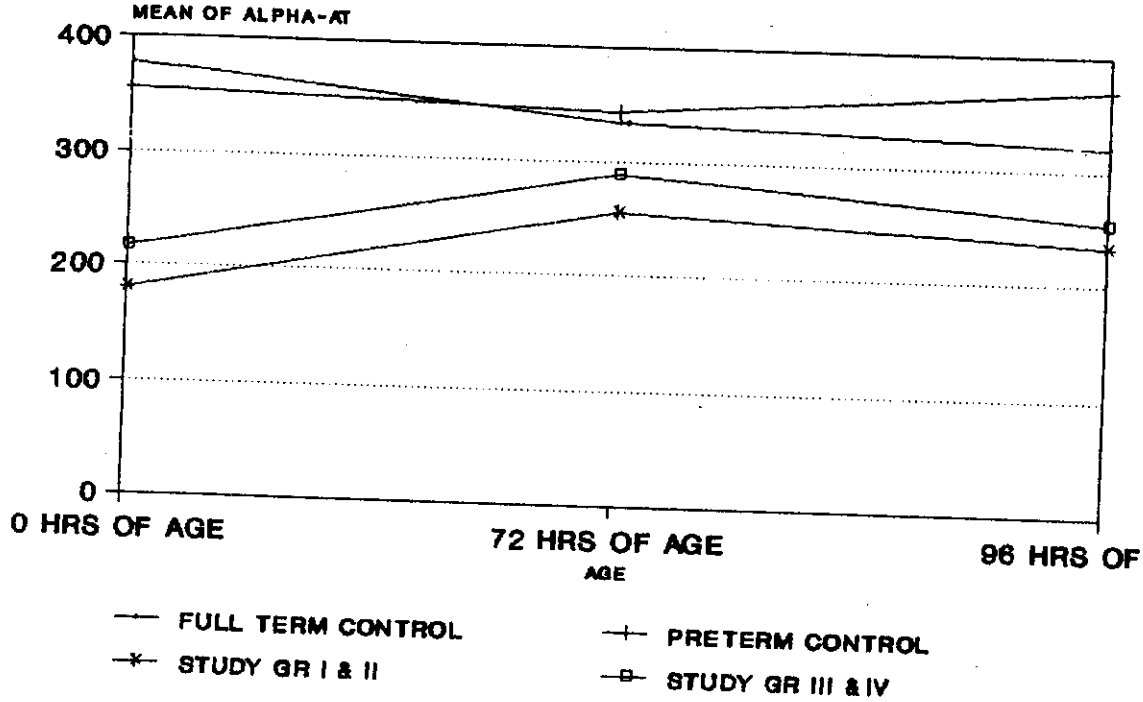


Table (11) : The association between cord blood α_1- AT level and CXR grading in cases of RDS .

Cord blood α_1- AT level (mg / dl)		CXR grading	
M	195.8	M	2.6
SD	85.8	SD	1.2

r = 0.2
t = 1.786
p = 0.02 (< 0.05 ∴ S.)

Table (12) : The association between cord blood α_1- AT level and gestational age in cases of RDS .

Cord blood α_1- AT level (mg / dl)		gestational age (weeks)	
M	195.8	M	31.1
SD	85.8	SD	3.2

r = 0.046
t = 0.41
p = 0.684 (> 0.05 ∴ N.S.)

Table (13) : Mean and SD of the level of serum electrolytes in cases treated with surfactant at 24 and 96 hours of age .

	24 hours of age level (n = 45)		96 hours of age level (n = 16)		t	p
Na (m.mol / L)	M	137.0	M	145.9	4.855	< 0.05 ∴S.
	SD	6.4	SD	9.3		
K (m.mol / L)	M	4.5	M	4.6	0.153	> 0.05 ∴N.S.
	SD	0.9	SD	1.4		
Cl (m.mol / L)	M	107.4	M	109.6	1.262	> 0.05 ∴N.S.
	SD	6.3	SD	8.8		
HCO_3^- (m.mol / L)	M	16.8	M	17.9	1.032	> 0.05 ∴N.S.
	SD	3.6	SD	5.6		

FIG 2; MEAN & SD OF SERUM ELECTROLYTES
IN CASES TREATED WITH SURF, 24 & 96 HS

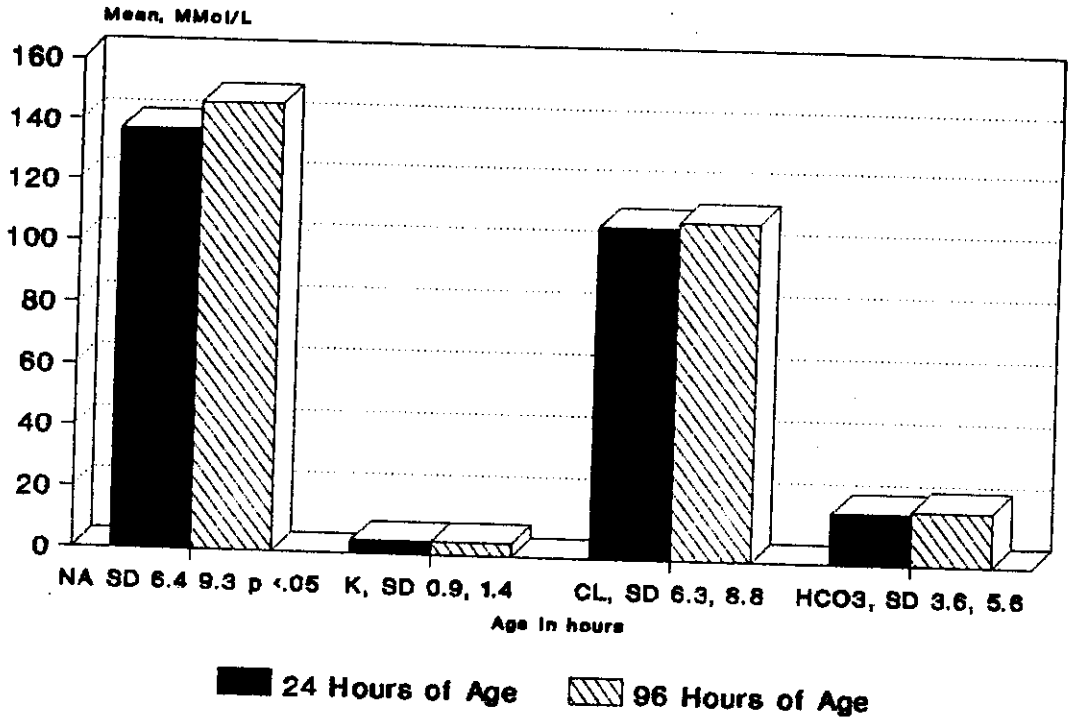


Table (14) : Mean and SD of the level of serum electrolytes in the cases treated without surfactant at 24 , 96 hours of age .

	24 hours of age level (n = 15)		96 hours of age level (n = 6)		t	p
Na (m.mol / L)	M	135.6	M	141.3	2.143	> 0.05 ∴N.S.
	SD	6.2	SD	2.9		
K (m.mol / L)	M	4.9	M	3.9	1.799	> 0.05 ∴N.S.
	SD	0.9	SD	1.9		
Cl (m.mol / L)	M	105.7	M	109.5	1.285	> 0.05 ∴N.S.
	SD	6.5	SD	5.2		
HCO_3^- (m.mol / L)	M	16.3	M	19.2	1.361	> 0.05 ∴N.S.
	SD	3.7	SD	5.9		

FIG. 3; MEAN, SD OF SERUM ELECTROLYTES
CASES TREATED WITHOUT SURFACTANT

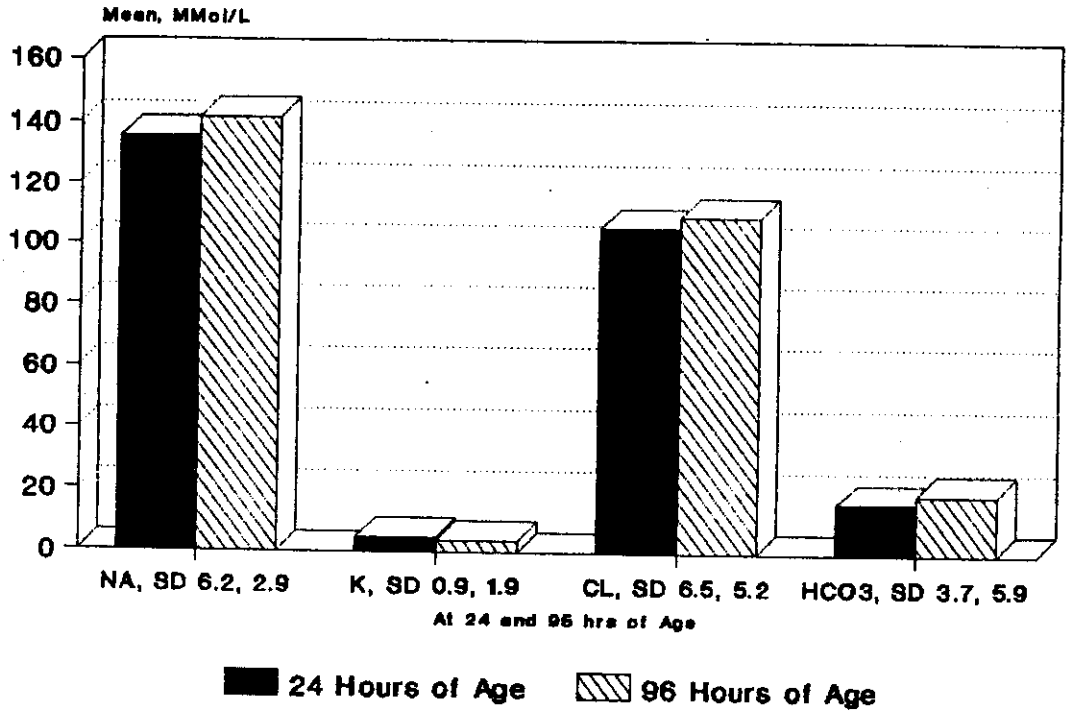


Table (15) : Mean and SD of the levels of serum electrolytes at the age of 24 hours in the cases treated with surfactant and cases treated without .

	Cases treated with (n = 45)		Cases treated without (n = 15)		t	p
Na (m.mol / L)	M	137.0	M	135.6	0.753	> 0.05 ∴N.S.
	SD	6.4	SD	6.2		
K (m.mol / L)	M	4.5	M	4.9	1.702	> 0.05 ∴N.S.
	SD	0.9	SD	0.9		
Cl (m.mol / L)	M	107.4	M	105.7	0.913	> 0.05 ∴N.S.
	SD	6.3	SD	6.5		
HCO_3^- (m.mol / L)	M	16.8	M	16.3	0.495	> 0.05 ∴N.S.
	SD	3.6	SD	3.7		

FIG. 4; MEAN, SD OF ELECTROLYTE IN
CASES TREATED WITH & WITHOUT SURF, 24H

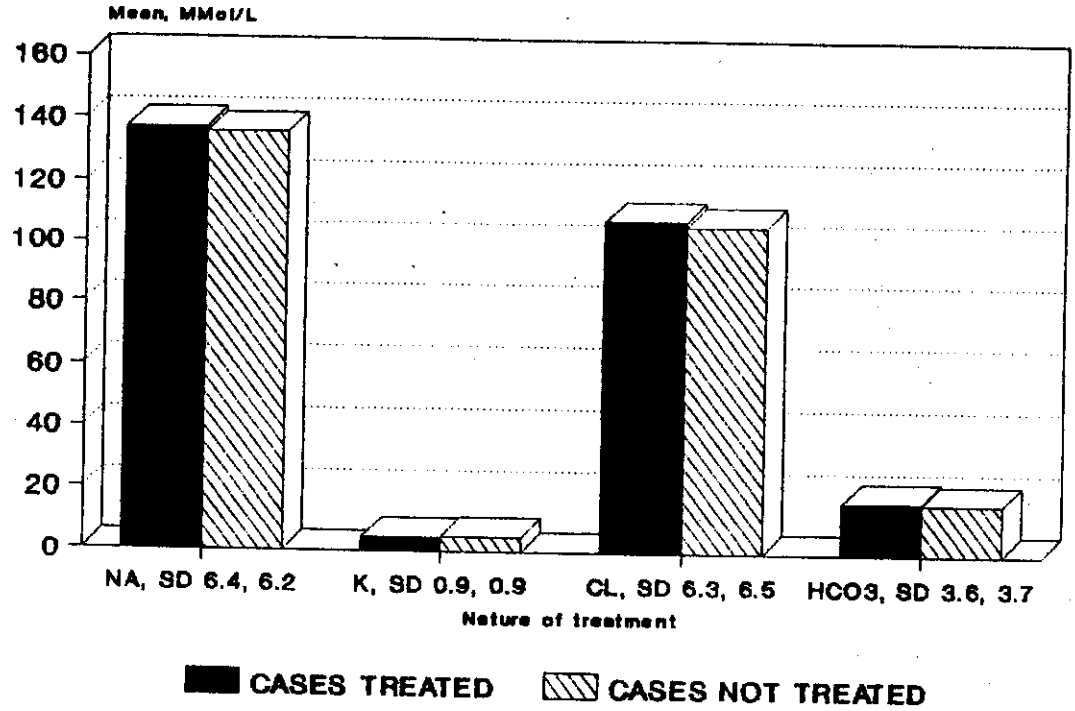


Table (16) : Mean and SD of the levels of serum electrolytes at the age of 96 hours in the cases treated with surfactant and cases treated without.

	Cases treated with (n = 16)		Cases treated without (n = 6)		t	p
Na (m.mol / L)	M	145.9	M	141.3	1.17	> 0.05 ∴N.S.
	SD	9.3	SD	2.9		
K (m.mol / L)	M	4.6	M	3.9	1.047	> 0.05 ∴N.S.
	SD	1.4	SD	1.9		
Cl (m.mol / L)	M	109.6	M	109.5	0.032	> 0.05 ∴N.S.
	SD	8.8	SD	5.2		
HCO_3^- (m.mol / L)	M	17.9	M	19.2	0.503	> 0.05 ∴N.S.
	SD	5.6	SD	5.9		

FIG. 5; MEAN, SD OF ELECTROLYTES IN CASES TREATED WITH AND WITHOUT SURF 96H

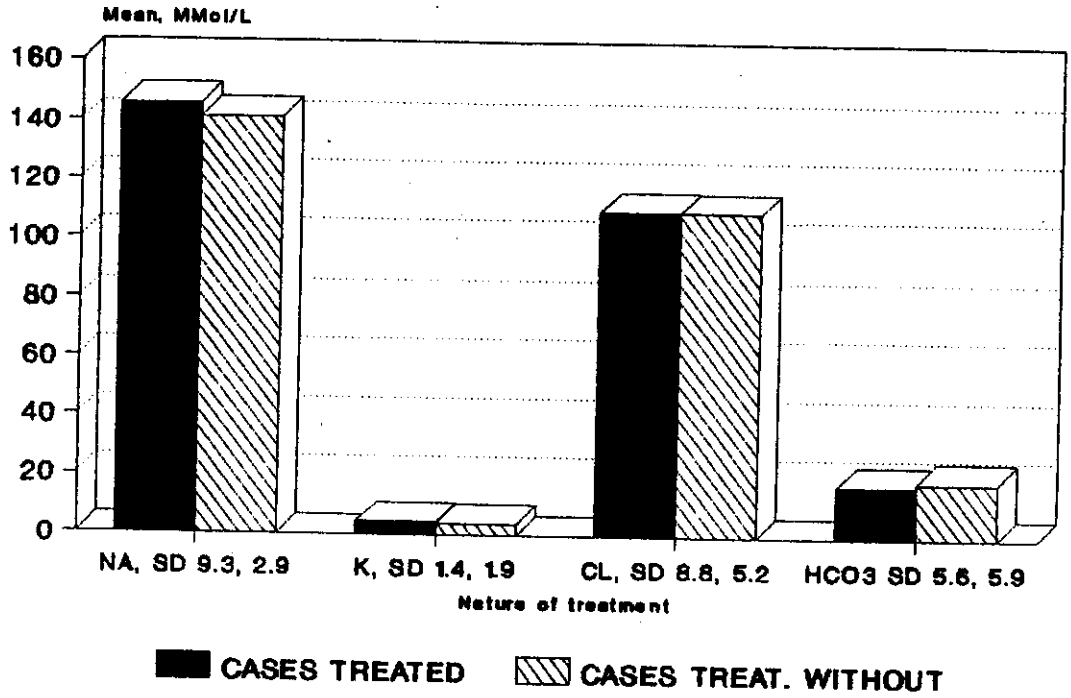


Table (17) : Studies of FiO_2(%) of the ventilator in the starting settings , 72 and 96 hours of age in cases treated with surfactant and cases treated without.

	starting settings		72 hrs. of age		96 hrs. of age		F	P
cases treated (n) =	M	92.3	M	73.0	M	66.8	21.689	< 0.001 ∴V.H.S.
	SD	14.4	SD	20.9	SD	22.5		
	55		25		21			
cases treated without(n)=	M	74.2	M	72.5	M	77.5		
	SD	21.5	SD	17.7	SD	31.8		
	6		2		2			
t	2.783		0.03					
p	< 0.01 ∴H.S.		> 0.05 ∴N.S.					

FIG. 6; STUDY OF FIO2% OF THE VENT. IN
CSES TREATED WITH & CSES TREATED WITHOUT

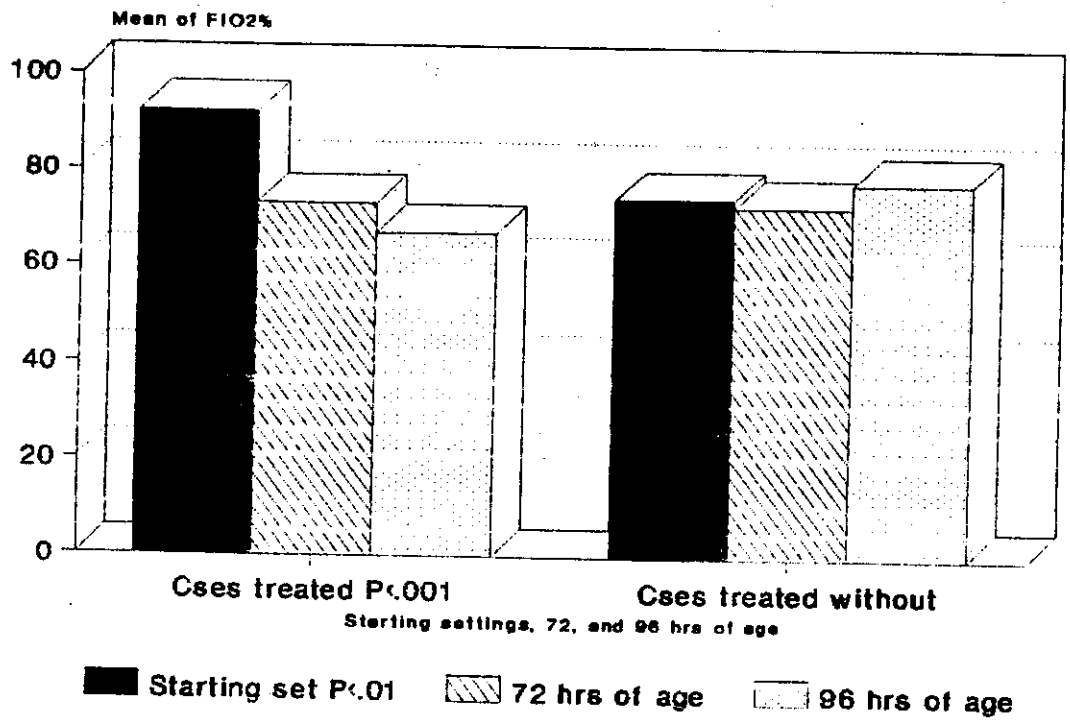
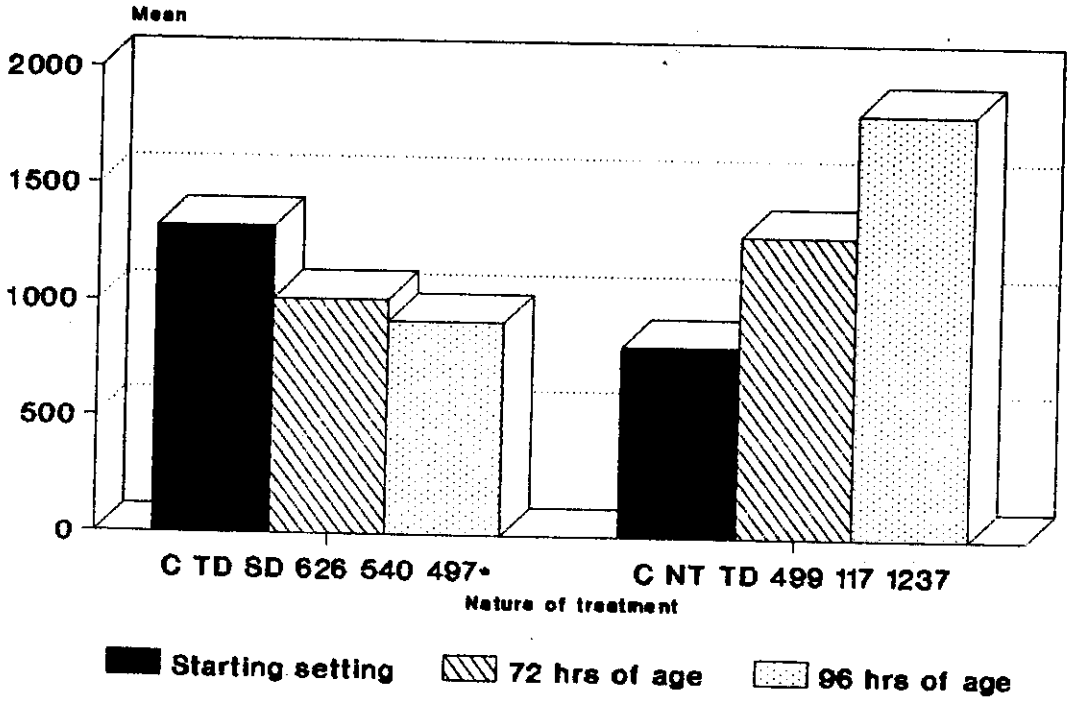


Table (18) : Studies of ventilation index* in starting settings , 72 and 96 hours of age is cases treated with surfactant and cases treated without .

	starting settings		72 hrs. of age		96 hrs. of age		F	P
cases treated with (n) =	M	1319.6	M	1012.4	M	918.5	4.992	< 0.01 ∴H.S.
	SD	625.7	SD	539.9	SD	496.9		
	55		25		21			
cases treated without(n)=	M	816.7	M	1292.5	M	1825.0		
	SD	499.3	SD	116.7	SD	1237.4		
	6		2		2			
t	1.899		0.72					
p	< 0.05 ∴S.		> 0.05 ∴N.S.					

* V.I. = PIP × R (Michael et al. , 1990) .

FIG. 7; MEAN, SD OF VENT INDEX IN CASES
TREATED AND NOT TREATED WITH SURFACTANT



* p <0.01

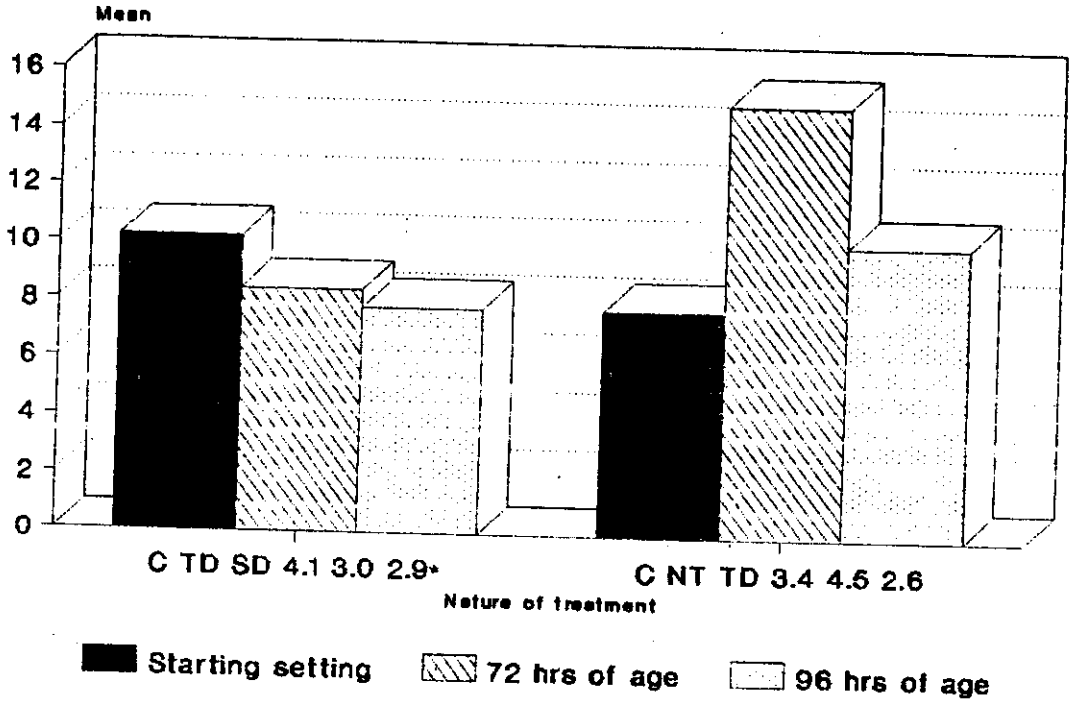
Table (19) : Studies of mean airway pressure* in the starting settings , 72 and 96 hours of age in cases treated with surfactant and cases treated without .

	starting settings		72 hrs. of age		96 hrs. of age		F	P
cases treated with (n) =	M	10.2	M	8.4	M	7.8	4.218	< 0.05 ∴S.
	SD	4.1	SD	3.0	SD	2.9		
	55		25		21			
cases treated without(n)=	M	7.8	M	15.0	M	10.1		
	SD	3.4	SD	4.5	SD	2.6		
	6		2		2			
t	1.371		2.939					
p	> 0.05 ∴N.S.		< 0.01 ∴H.S.					

* $MAP = 0.8 (PIP - PEEP) \times (\frac{Ti}{Ti + Te}) + PEEP$

(Fanarroff and Martin , 1987) .

FIG. 8; MEAN, SD OF MEAN AIRWAY PRES IN
CSES TREATED WITH & TREATED WITHOUT SURF

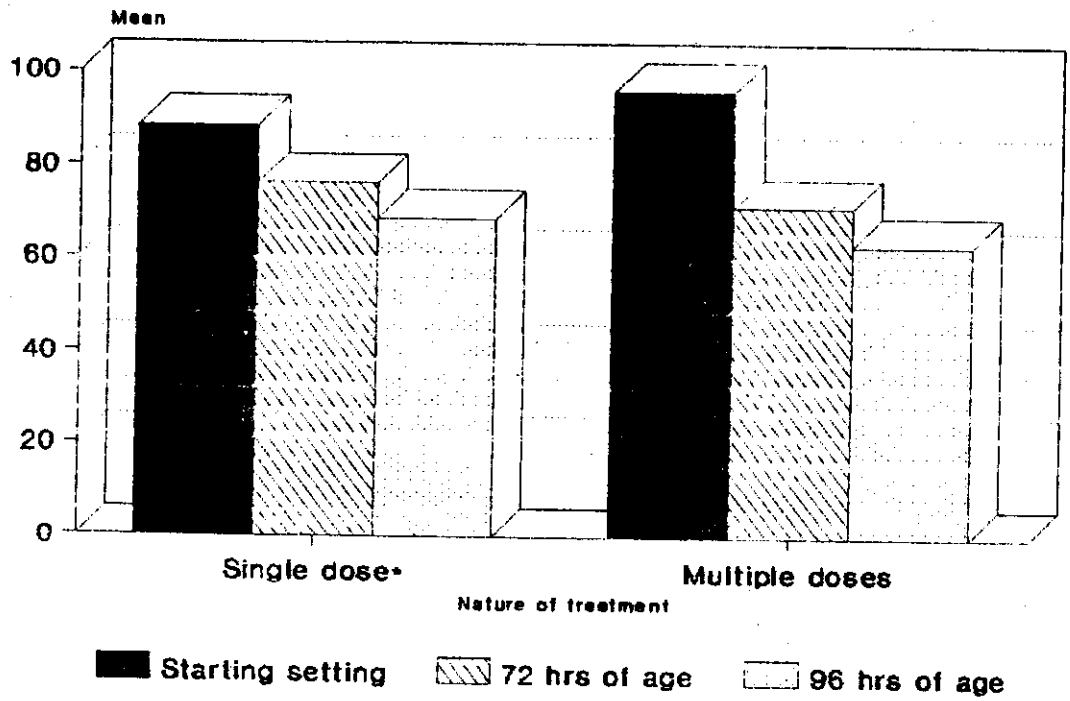


* p <0.05

Table (20) : Studies of FiO_2 (%) of the ventilator in the starting settings , 72 and 96 hours of age in cases received a single dose and cases received multiple doses of surfactant .

	starting settings		72 hrs. of age		96 hrs. of age		F	P
cases received a single dose (n) =	M	88.5	M	76.1	M	68.6	4.121	< 0.05 ∴S.
	SD	17.2	SD	19.2	SD	20.1		
	27		9		7			
cases received multiple dose (n)=	M	95.9	M	71.2	M	62.9	19.246	< 0.001 ∴V.H.S.
	SD	10.0	SD	22.2	SD	24.2		
	28		16		14			
t	1.948		0.558		0.537			
p	< 0.05 ∴S.		> 0.05 ∴N.S.		> 0.05 ∴N.S.			

FIG. 9; STUDIES OF FiO2% OF THE VENTILATOR IN CASES RECEIVED SINGLE, MULT DOSE

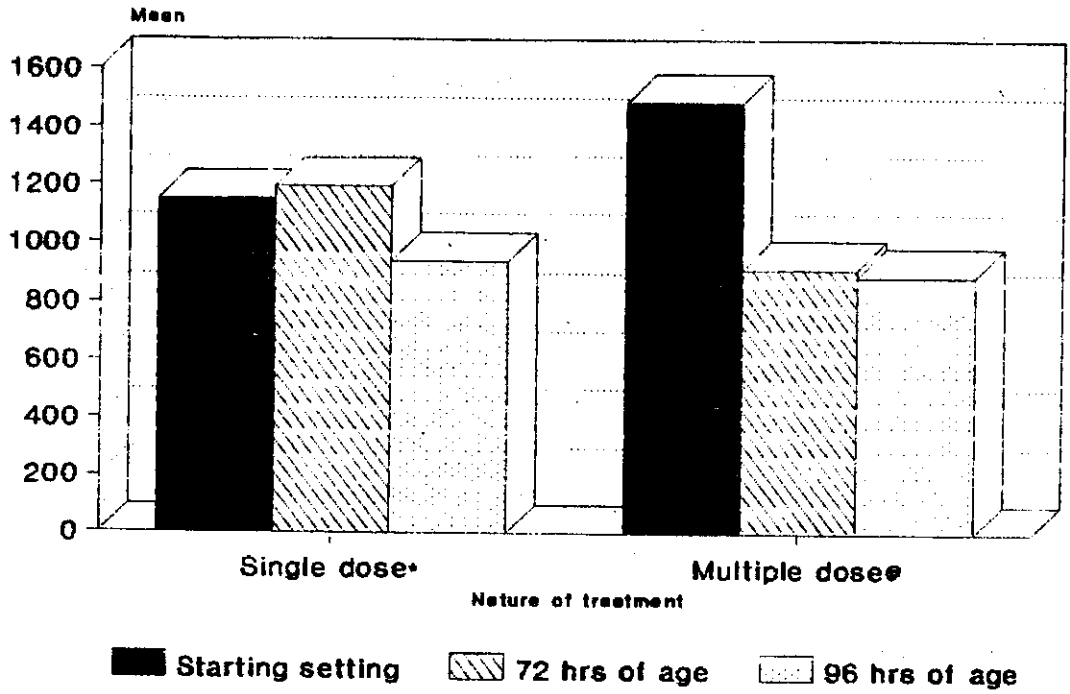


* p <0.05

Table (21) : Studies of ventilation index in the starting settings , 72 and 96 hours of age in cases received a single dose and cases received multiple doses of surfactant .

	starting settings		72 hrs. of age		96 hrs. of age		F	P
cases received a single dose (n) =	M	1148.0	M	1192.2	M	937.1	0.49	> 0.05 ∴N.S.
	SD	603.8	SD	543.9	SD	282.6		
	27		9		7			
cases received multiple dose (n)=	M	1485.1	M	911.2	M	885.9	7.453	< 0.001 ∴V.H.S.
	SD	611.5	SD	527.5	SD	560.0		
	28		16		14			
t	2.056		1.264		0.226			
p	< 0.05 ∴S.		> 0.05 ∴N.S.		> 0.05 ∴N.S.			

FIG. 10; STUDIES OF VENTILATION INDEX IN CASES RECEIVED SINGLE AND MULTIPLE DOSES

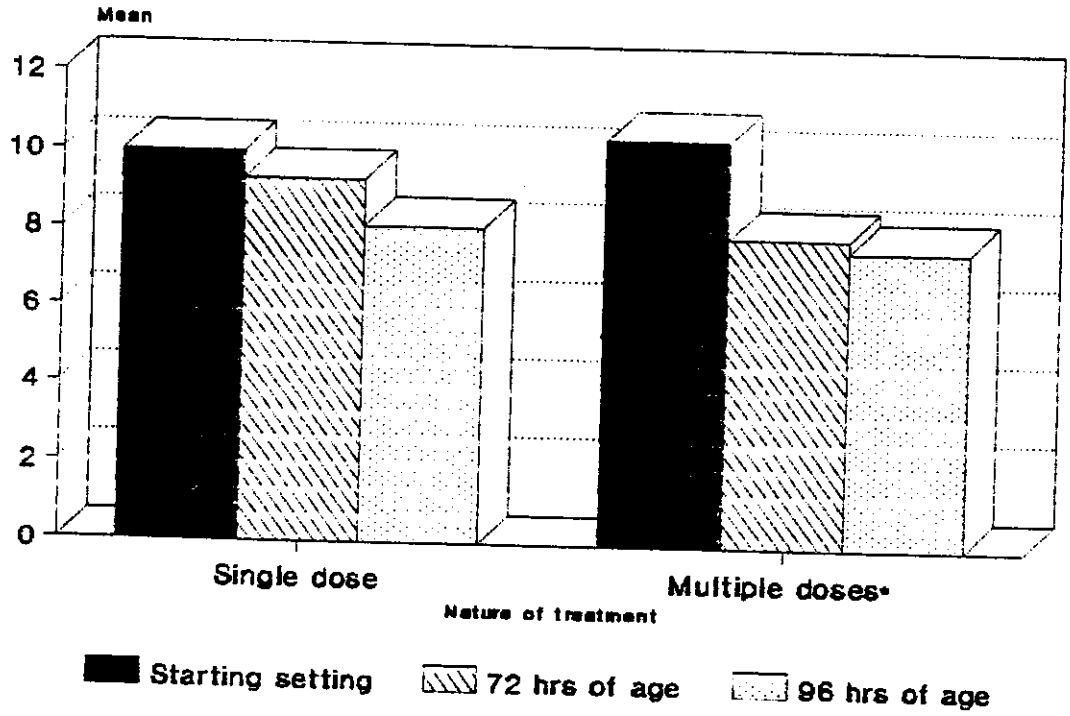


* p <0.05 # P<0.001

Table (22) : Studies of mean airway prrssure in the starting settings , 72 and 96 hours of age in cases received a single dose and cases received multiple doses of surfactant .

	starting settings		72 hrs. of age		96 hrs. of age		F	P
cases received a single dose (n) =	M	10.0	M	9.3	M	8.1	0.486	> 0.05 ∴N.S.
	SD	5.1	SD	3.0	SD	2.1		
	27		9		7			
cases received multiple dose (n)=	M	10.4	M	7.9	M	7.6	5.633	< 0.01 ∴ H.S.
	SD	3.0	SD	3.0	SD	3.1		
	28		16		14			
t	0.413		1.153		0.382			
p	> 0.05 ∴N.S.		> 0.05 ∴N.S.		> 0.05 ∴N.S.			

FIG. 11; STUDIES OF MEAN AIRWAY PRESSURE
IN CASES RECEIVED SINGLE & MULTIPLE DOSE

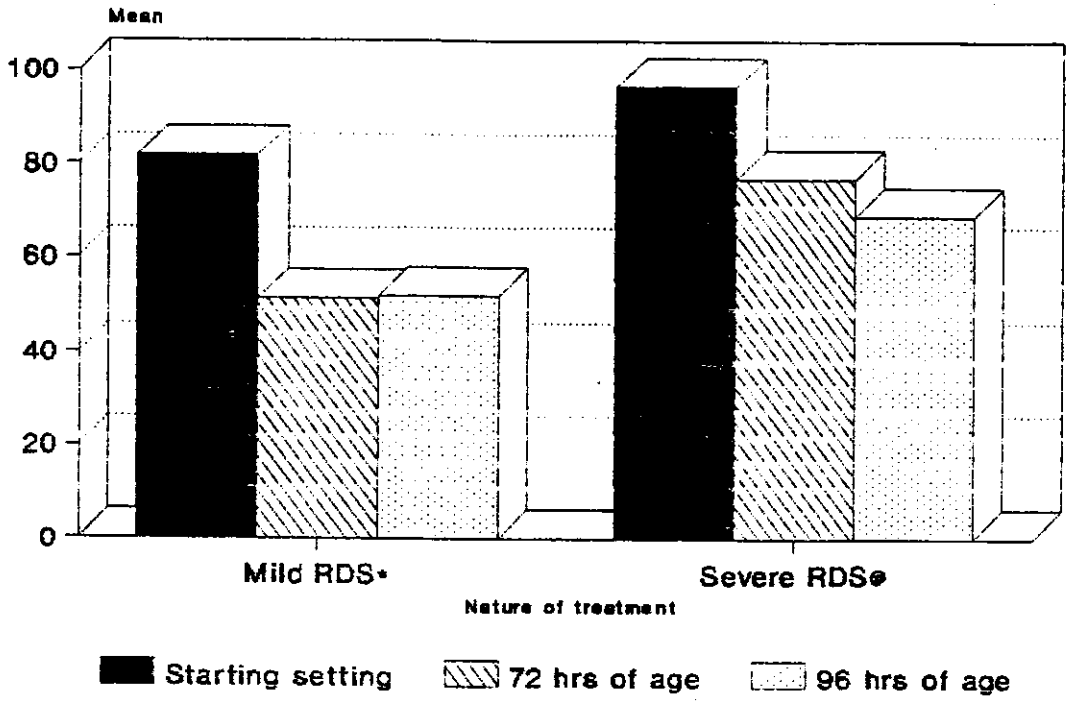


* p <0.01

Table (23) : Studies of FiO_2 (%) of the ventilator in the starting settings , 72 and 96 hours of age in mild RDS (grades I and II) and severe RDS (grades III and IV) .

	starting settings		72 hrs. of age		96 hrs. of age		F	P
Mild RDS	M	81.8	M	51.3	M	51.7	7.257	< 0.01 ∴H.S.
	SD	19.6	SD	10.3	SD	16.1		
(n) =	25		4		3			
Severe RDS	M	96.5	M	76.7	M	68.7	20.075	< 0.001 ∴V.H.S.
	SD	9.0	SD	19.3	SD	23.7		
(n)=	36		23		19			
t	3.502		3.886		1.578			
p	< 0.01 ∴H.S.		< 0.01 ∴H.S.		> 0.05 ∴N.S.			

FIG. 12; STUDIES OF FiO2% OF VENTILATOR
IN MILD RDS AND SEVERE RDS



* p <0.01 @ P <0.001

Table (24) : Studies of ventilation index in the starting settings , 72 and 96 hours of age in mild RDS (grades I and II) and severe RDS (grades III and IV).

	starting settings		72 hrs. of age		96 hrs. of age		F	P
Mild RDS (n) =	M	935.9	M	740	M	606.7	1.49	> 0.05 ∴N.S.
	SD	380.3	SD	210.4	SD	222.8		
	25		4		3			
Severe RDS (n)=	M	1494.4	M	1084.1	M	1044.3	4.752	< 0.05 ∴S.
	SD	669.6	SD	548.5	SD	626.1		
	36		23		19			
t	4.135		2.214		2.269			
p	< 0.01 ∴H.S.		< 0.05 ∴S.		< 0.05 ∴S.			

Table (25) : Studies of the mean airway pressure in the starting settings , 72 and 96 hours of age in mild RDS and severe RDS .

	starting settings		72 hrs. of age		96 hrs. of age		F	P
Mild RDS (n) =	M	8.2	M	6.6	M	5.6	1.824	> 0.05 ∴N.S.
	SD	2.8	SD	1.3	SD	1.5		
	25		4		3			
Severe RDS (n)=	M	11.1	M	9.3	M	8.4	3.609	< 0.05 ∴S.
	SD	4.5	SD	3.6	SD	2.8		
	36		23		19			
t	3.098		2.618		2.596			
p	< 0.01 ∴H.S.		< 0.05 ∴S.		< 0.05 ∴S.			

Table (26) : Studies of FiO_2 (%) of the ventilator in the starting settings , 72 and 96 hours of age in cases < 30 weeks' gestation and cases > 30 weeks' gestation.

	starting settings		72 hrs. of age		96 hrs. of age		F	P
Cases <30 weeks'gestation (n) =	M	93.3	M	68.5	M	59.2	19.434	< 0.001 ∴V.H.S.
	SD	12.2	SD	19.5	SD	21.5		
	33		15		13			
cases >30 weeks'gestation (n)=	M	87.1	M	78.3	M	76.7	3.435	< 0.05 ∴S.
	SD	19.2	SD	20.9	SD	22.9		
	28		12		9			
t	1.474		1.247		1.806			
p	> 0.05 ∴N.S.		> 0.05 ∴H.S.		> 0.05 ∴N.S.			

Table (27) : Studies of ventilation index in the starting settings , 72 and 96 hours of age in cases < 30 weeks' gestation and cases > 30 weeks' gestation .

	starting settings		72 hrs. of age		96 hrs. of age		F	P
cases < 30 weeks'gestation (n) =	M	1216.9	M	871.3	M	754.6	5.506	< 0.01 ∴H.S.
	SD	470.3	SD	355.7	SD	394.5		
	33		15		13			
cases > 30 weeks'gestation (n)=	M	1332.8	M	1235.4	M	1316.9	0.283	> 0.05 ∴N.S.
	SD	781.1	SD	639.6	SD	716.1		
	28		12		9			
t	0.687		1.765		2.141			
p	> 0.05 ∴N.S.		> 0.05 ∴N.S.		< 0.05 ∴S.			

Table (28) : Studies of the mean airway pressure in the starting settings , 72 and 96 hours of age in cases< 30 weeks' gestation and cases > 30 weeks' gestation.

	starting settings		72 hrs. of age		96 hrs. of age		F	P
cases < 30 weeks'gestation (n) =	M	9.6	M	8.0	M	6.8	4.916	< 0.05 ∴S.
	SD	3.2	SD	3.3	SD	2.5		
	33		15		13			
cases > 30 weeks'gestation (n)=	M	10.4	M	9.9	M	9.6	0.175	> 0.05 ∴N.S.
	SD	5.0	SD	3.5	SD	2.5		
	28		12		9			
t	0.723		1.419		2.582			
p	> 0.05 ∴N.S.		> 0.05 ∴N.S.		< 0.05 ∴S.			

Table (29) : Studies of FiO_2 (%) of the ventilator in the starting settings , 72 and 96 hours of age in cases with cord blood α_1- AT level < 200* mg / dl and cases > 200 .

	starting settings		72 hrs. of age		96 hrs. of age		F	P
cases < 200 mg / dl (n) =	M	87.4	M	68.8	M	66.5	8.43	< 0.001 ∴V.H.S.
	SD	18.8	SD	21.0	SD	22.6		
	44		15		13			
cases > 200 mg / dl (n)=	M	95.6	M	78.1	M	67.8	10.112	< 0.001 ∴V.H.S.
	SD	8.6	SD	19.1	SD	24.5		
	18		12		9			
t	2.381		1.179		0.126			
p	< 0.05 ∴S.		>0.05 ∴N.S.		> 0.05 ∴N.S.			

* The lowest level of normal range of α_1- AT is 200 mg / dl according to the table of calibration values presented with the Kits . see Appendix table (1) .

Table (30) : Studies of the ventilation index in the starting settings , 72 and 96 hours of age in cases with cord blood α_1- AT level < 200 mg / dl and cases > 200 .

	starting settings		72 hrs. of age		96 hrs. of age		F	P
Cases < 200 mg / dl (n) =	M	1273.3	M	983	M	1007.7	3.194	< 0.05 ∴S.
	SD	628.2	SD	464.8	SD	669.2		
	44		15		13			
Cases > 200 mg / dl (n)=	M	1220.3	M	1095.8	M	1036.7	0.321	> 0.05 ∴N.S.
	SD	655.9	SD	606.4	SD	569		
	18		12		9			
t	0.292		0.531		0.109			
p	> 0.05 ∴N.S.		> 0.05 ∴N.S.		> 0.05 ∴N.S.			

Table (31) : Studies of the mean airway pressure in the starting settings , 72 and 96 hours of age in cases with cord blood α_1- AT level < 200 mg / dl and cases > 200 .

	starting settings		72 hrs. of age		96 hrs. of age		F	P
cases < 200 mg / dl (n) =	M	9.7	M	8.2	M	7.5	3.2	<0.05 ∴S.
	SD	3.4	SD	2.4	SD	2.8		
	44		15		13			
cases > 200 mg / dl (n)=	M	10.3	M	9.7	M	8.7	0.532	>0.05 ∴N.S.
	SD	5.6	SD	4.5	SD	3		
	18		12		9			
t	0.353		1.042		0.947			
p	>0.05 ∴N.S.		>0.05 ∴N.S.		>0.05 ∴N.S.			

Table (32) : Studies of FiO_2 (%) of the ventilator in the startings settings , 72 and 96 hours of age in cases with one minute Apgar score < 6 and cases > 6 .

	starting settings		72 hrs. of age		96 hrs. of age		F	P
< 6 (n) =	M	92.4	M	78.5	M	68.5	9.878	< 0.001 ∴V.H.S.
	SD	14.6	SD	19.5	SD	22.7		
	38		17		13			
> 6 (n)=	M	87.7	M	63.5	M	53.3	8.097	< 0.001 ∴V.H.S.
	SD	17.6	SD	19	SD	30.5		
	24		10		9			
t	1.092		1.961		1.271			
p	> 0.05 ∴N.S.		< 0.05 ∴S.		> 0.05 ∴N.S.			

Table (33) : Studies of the Ventilation index in the starting settings , 72 and 96 hours of age in cases with one minute Apgar score < 6 and cases > 6 .

	starting settings		72 hrs. of age		96 hrs. of age		F	P
< 6 (n) =	M	1310	M	1115.6	M	1035.4	1.204	> 0.05 ∴N.S.
	SD	720.7	SD	540	SD	523.4		
	38		17		13			
> 6 (n)=	M	1150.6	M	834	M	881.3	1.769	> 0.05 ∴N.S.
	SD	437.7	SD	461.9	SD	721.3		
	24		10		9			
t	1.083		3.661		0.548			
p	> 0.05 ∴N.S.		< 0.01 ∴H.S.		> 0.05 ∴N.S.			

Table (35) : Studies of FiO_2 (%) of the ventilator in the starting settings , 72 and 96 hours of age in cases with respiratory rate at birth < 60 / minute and cases > 60 .

	starting settings		72 hrs. of age		96 hrs. of age		F	P
< 60 (n) =	M	91.7	M	72.1	M	65.7	12.171	< 0.001 ∴V.H.S.
	SD	15.2	SD	20.1	SD	24.2		
	41		21		15			
> 60 (n)=	M	87.6	M	75.8	M	60.7	5.547	< 0.01 ∴H.S.
	SD	17.6	SD	22.7	SD	20.3		
	21		6		7			
t	0.923		0.36		0.505			
p	> 0.05 ∴N.S.		> 0.05 ∴N.S.		> 0.05 ∴N.S.			

Table (36) : Studies of the ventilation index in the starting settings , 72 and 96 hours of age in cases with respiratory rate at birth < 60 / minute and cases > 60 .

	starting settings		72 hrs. of age		96 hrs. of age		F	P
< 60 (n) =	M	1229.2	M	943.8	M	948.1	2.716	> 0.05 ∴N.S.
	SD	529.6	SD	450.9	SD	615.5		
	41		21		15			
> 60 (n)=	M	1346.7	M	1345.8	M	1062.8	0.408	> 0.05 ∴N.S.
	SD	785.7	SD	683.4	SD	617.2		
	21		6		7			
t	0.617		1.358		0.406			
p	> 0.05 ∴N.S.		> 0.05 ∴N.S.		> 0.05 ∴N.S.			

Table (37) : Studies of mean airway pressure in the starting settings , 72 and 96 hours of age in cases with respiratory rate at birth < 60 / minute and cases > 60 .

	starting settings		72 hrs. of age		96 hrs. of age		F	P
< 60 (n) =	M	9.7	M	8.5	M	7.7	1.812	> 0.05 ∴N.S.
	SD	4.2	SD	3.3	SD	2.7		
	41		21		15			
> 60 (n)=	M	10.4	M	10.2	M	8.5	0.594	> 0.05 ∴N.S.
	SD	4.1	SD	4.1	SD	3.3		
	21		6		7			
t	0.446		0.932		0.559			
P	> 0.05 ∴N.S.		> 0.05 ∴N.S.		> 0.05 ∴N.S.			

Table (38) : Mean and SD of one minute and 5 minutes in cases of RDS and preterm controls .

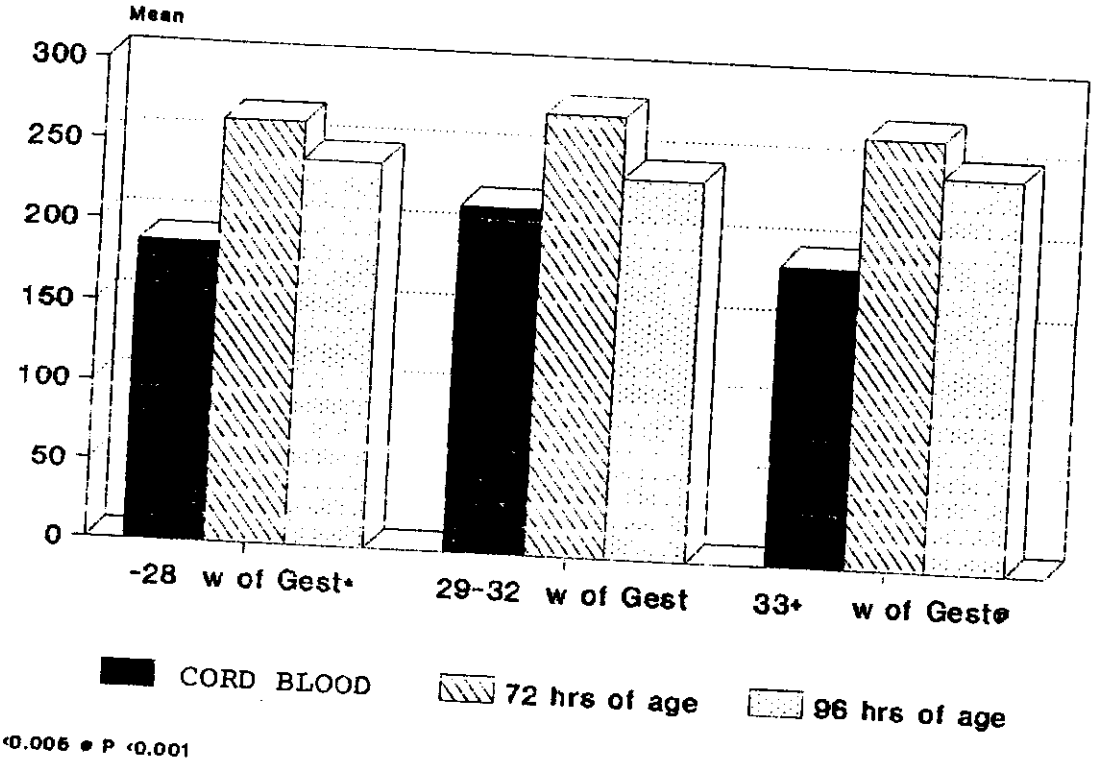
	Preterm cont-rols (n = 12)		Cases of RDS (n = 80)		t	p
One minute APGAR	M	7.7	M	5.1	4.493	< 0.001 ∴V.H.S.
	SD	1.5	SD	1.9		
5 minutes APGAR	M	9.2	M	7.1	4.206	< 0.001 ∴V.H.S.
	SD	0.9	SD	1.6		

Table (39) : Incidence (%) of complications in cases treated with surfactant and cases treated without surfactant .

	Cases treated (n = 56)		Cases treated without surf-actant (n=24)		Test of proportion	P
	%	No. of cases	%	No. of cases		
PDA	17	10	8	2	1.204	> 0.05 ∴N.S.
I.V.H.	12.5	7	0	0	2.828	< 0.01 ∴H.S.
B.P.D.	5	3	0	0	1.717	> 0.05 ∴N.S.
Sepsis	23	13	8	2	1.901	> 0.05 ∴N.S.
NEC	10	6	4	1	1.059	> 0.05 ∴N.S.
Pulmonary hemorrhage	7	4	0	0	2.053	< 0.05 ∴S.
*Air leaks	14	8	0	0	3.019	< 0.01 ∴H.S.
Total deathes	30	17	0	0	4.899	< 0.01 ∴H.S.

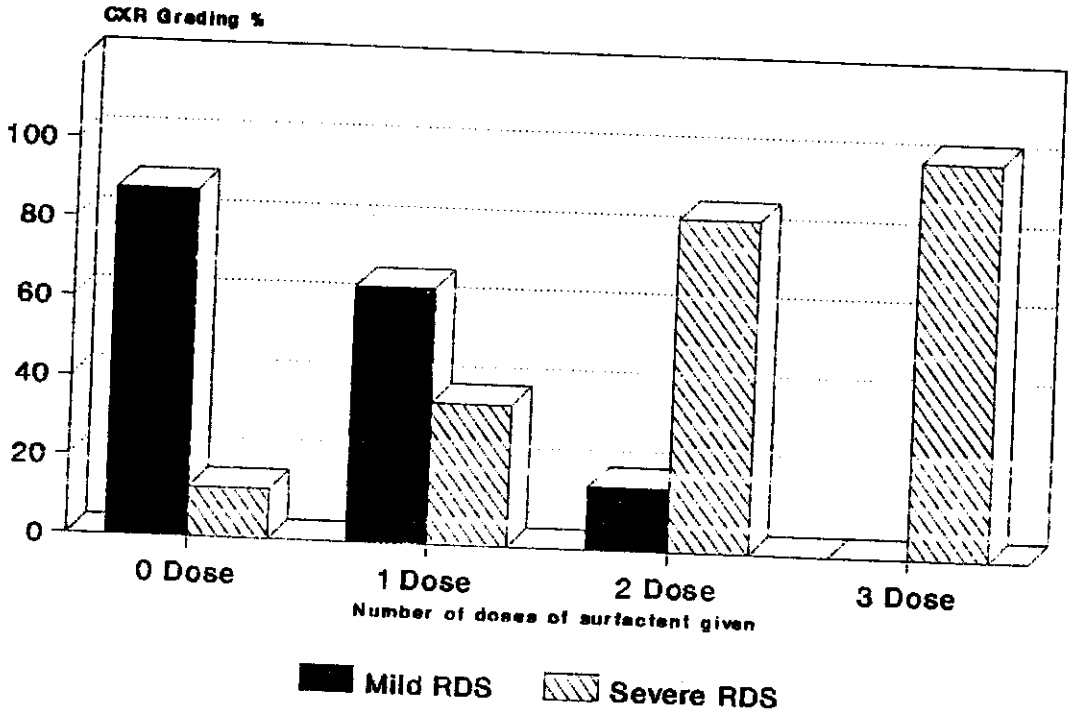
* Air leaks = pneumothorax , pneumomediastinum and pulmonary interstitial emphysema (phibbs et al. , 1991) .

FIG. 13; GESTATIONAL AGE OF CASES OF RDS VERSUS ALPHA1-AT AT CORD BLOOD, 72, 96 H



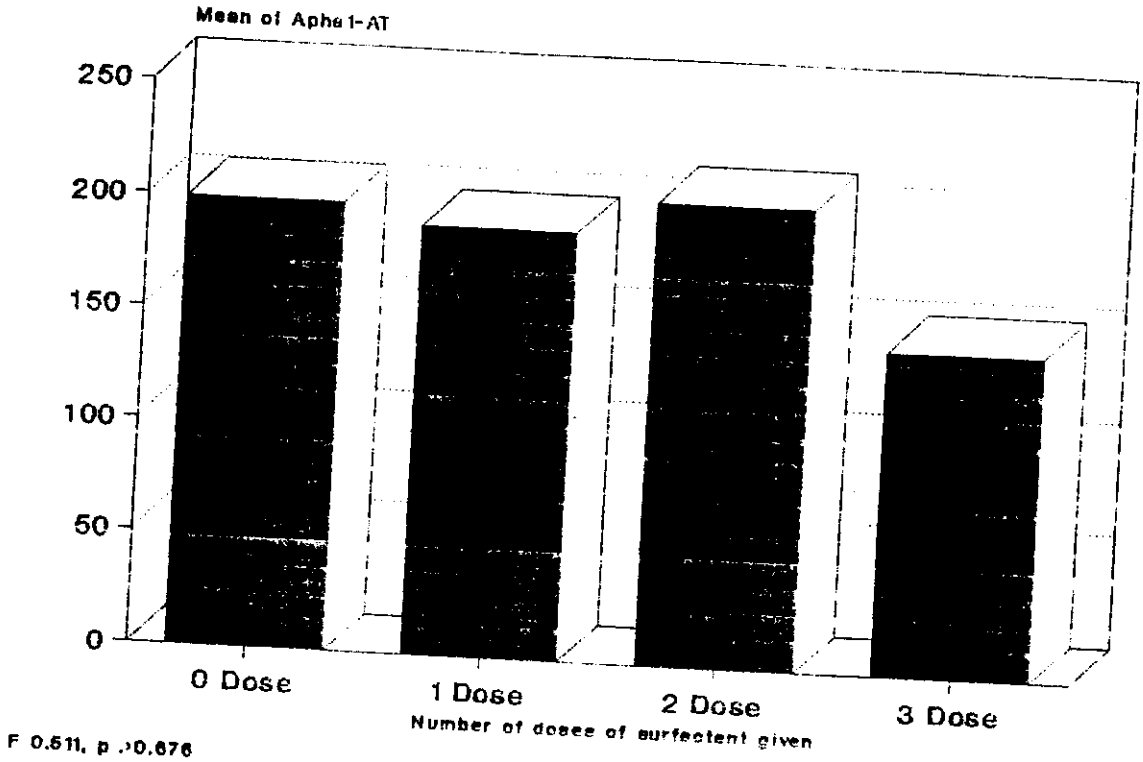
* p <0.005 @ p <0.001

FIG. 14; SEVERITY OF RDS, MILD & SEVERE
VERSUS THE NUMBER OF DOSES OF SURF GIVEN



* Chi-square p <0.001

FIG. 15; CORD BLOOD ALPHA1-AT VERSUS NUMBER OF DOSES OF SURFACTANT GIVEN



* Table (3) shows that the serum cord blood α_1- AT level was (356.6 ±61) in preterm controls and (378 ±164.9) in full - term controls . This difference was statistically not significant .

* Table (4) shows that cord blood α_1- AT serum level was (356.6 ±61) in preterm controls and (195.8 ±85.8) in cases of RDS . This difference was statistically very highly significant .

* Table (5) shows that the cord blood α_1- AT level was (238.4 ±131.7) in cases delivered by C.S. and (186.7 ± 70.8) in cases delivered by S.V.D. This difference was statistically significant .

* Table (6) shows that the cord blood α_1- AT level was (356.6 ±61) in preterm controls , (178.4 ± 63.1) in cases of mild RDS and (216 ±103.6) in cases of severe RDS . This difference was statistically very highly significant . When cases of mild RDS were compared to the control group , the difference was statistically very highly significant (t = 6.678 , p < 0.001). And when cases of severe RDS were compared to the control group . This difference was statistically very highly significant (t = 5.177 , p <0.001).

The serum α_1 -AT level at 72 hours of age was (344 ±79) in control group ,(255.6 ± 68.5) in cases of mild RDS and (289.4 ±82.3) in cases of severe RDS . This difference was statistically highly significant . When cases of mild RDS were compared to the control group, the difference was statistically very highly significant (t = 3.57 , p <0.001). And when cases of severe RDS were compared to the control group, this difference was statistically significant (t=2.162, p<0.05).

The level of α_1- AT at 96 hours of age was (370.4 ±149) in the control group , (233.5 ± 69.9) in cases of mild RDS and (253.6 ±81.1) in cases of severe RDS . This difference was statistically very highly significant . When cases of mild RDS were compared to the control group , this difference was statistically very highly significant (t = 4.706, p < 0.001). And when cases of severe RDS were compared to the control group , this difference was statistically very highly significant (t = 3.892 , p < 0.001).

In preterm control group, the α_1- AT serum level was (356.6 ±61) at birth , (344 ±79) at 72 hours of age and (370.4 ±149) at 96 hours of age . This difference was statistically not significant .

In cases of mild RDS , the α_1 - AT level was (178.4 ±63.1) at birth , (255.6 ± 68.5) at 72 hours of age and (233.5 ±69.9) at 96 hours of age . This difference was statistically very highly significant .

In cases of severe RDS , the α_1- AT level was (216 $\pm$103.6) at birth , (289.4 $\pm$ 82.3) at 72 hours of age and (253.6 $\pm$81.1) at 96 hours of age . This difference was statistically highly significant .

* Table (7) shows that the cord blood α_1- AT level was (197.1 $\pm$84.4) in the living cases and (191 $\pm$93.6) in cases which eventually died . This difference was statistically not significant .

* Table (8) shows that the cord blood α_1- AT level was (206.7 $\pm$89.9) in the cases with intrapartum factors and (176.2 $\pm$66) in the cases without . This difference wsa statistically significant .

* Table (9) shows that the cord blood α_1- AT level was (189.1 $\pm$88.5) in the cases < 30 weeks' gestation and (200.7 $\pm$ 84.5) in the cases > 30 weeks' gestation . This difference was statistically not significant .

* Table (10) shows that the cord blood α_1- AT level was (252.5 $\pm$130) in cases treated with surfactant and (199.3 $\pm$92.9) in cases treated without. This difference was statistically not significant.

At 72 hrs. of age , the serum α_1- AT level was (293.6 $\pm$82.4) in cases treated with and (272.6 $\pm$72.4) in cases treated without . This differnce was statistically not significant .

At 96 hrs. of age , the serum α_1- AT level was (276.5 $\pm$102.7) in cases treated with and (245.9 $\pm$82.5) in cases treated without . This difference was statistically not significant .

In cases treated with surfactant , cord blood α_1- AT level was (252.5 $\pm$ 130), (293.6 $\pm$82.4) at 72 hrs. of age and (276.5 $\pm$102.7) at 96 hrs. of age . This differnce was statistically not significant .

In cases treated without surfactant , cord blood α_1- AT level was (199.3 $\pm$92.9), (272.6 $\pm$72.4) at 72 hrs. of age and (245.9 $\pm$ 82.5) at 96 hrs. of age . This difference was statistically significant .

* Table (11) shows that there was a weak association between cord blood α_1- AT and CXR grading ($r = 0.2$, $t = 1.786$, $p = 0.02$) . This difference was close to be significant .

* Table (12) shows that there is no association between cord blood α_1- AT and gestational age (r = 0.046 , t = 0.41 , p = 0.684) . This difference was not significant .

* Table (13) shows that the serum Na level was (137 ±6.4) at 24 hours of age and (145.9 ± 9.3) at 96 hours of age in cases treated with surfactant . This difference was statistically significant .

The serum K level was (4.5 ±0.9) at 24 hrs. of age and (4.6 ±1.4) at 96 hrs. of age. This difference was statistically not significant .

The serum Cl^- level was (107.4 ±7.3) at 24 hrs. of age and (109.6 ±8.8) at 96 hrs. of age . This difference was statistically not significant .

The serum HCO_3^- level was (16.8 ±3.6) at 24 hrs. of age and (17.9 ±5.6) at 96 hrs. of age in cases treated with surfactant. This difference was statistically not significant .

* Table (14) shows that the serum Na level was (135.6 ±6.2) at 24 hours of age and (141.3 ±2.9) at 96 hours of age in cases treated without surfactant . This difference was statistically not significant .

The serum K level was (4.9 ±0.9) at 24 hrs. of age and (3.9 ±1.9) at 96 hrs. of age. This difference was statistically not significant .

The serum Cl^- level was (105.7 ±6.5) at 24 hrs. of age and (109.5 ±5.2) at 96 hrs. of age . This difference was statistically not significant .

The serum HCO_3^- level was (16.3 ±3.7) at 24 hrs. of age and (19.2 ±5.9) at 96 hrs. of age . This difference was statistically not significant .

* Table (15) shows that the serum Na level was (137 ±6.4) at 24 hours of age in the cases treated with surfactant and (135.6 ±6.2) at 24 hours of age in cases treated without . This difference was statistically not significant .

The serum K level was (4.5 ±0.9) at 24 hrs. of age in cases treated with and (4.9 ± 0.9) at 24 hrs. of age in cases treated without. This difference was statistically not significant .

The serum Cl^- level was (107.4 ±6.3) at 24 hrs. of age in cases treated with and (105.7 ±6.5) at 24 hrs. of age in cases treated without . This difference was statistically not significant .

The serum HCO_3^- level was (16.8 ±3.6) at 24 hrs. of age in cases treated with and (16.3 ±3.7) at 24 hrs . of age in cases treated without . This difference was statistically not significant .

* Table (16) shows that the serum Na level was (145.9 ±9.3) at 96 hours of age in the cases treated with surfactant and (141.3 ±2.9) at 96 hours of age in cases treated without . This difference was statistically not significant .

The serum K level was (4.6 ±1.4) at 96 hrs. of age in cases treated with and (3.9 ±1.9) at 96 hrs. of age in cases treated without. This difference was statistically not significant .

The serum Cl^- level was (109.6 ±8.8) at 96 hrs. of age in cases treated with and (109.5 ±5.2) at 96 hrs. of age in cases treated without . This difference was statistically not significant .

The serum HCO_3^- level was (17.9 ±5.6) at 96 hrs. of age in cases treated with and (19.2 ±5.9) at 96 hrs. of age in cases treated without . This difference was statistically not significant .

* Table (17) shows that the FiO_2% in the starting settings of the ventilator was (92.3 ±14.4) in the cases treated with surfactant and (74.2 ±21.5) in the cases treated without . This difference was statistically highly significant .

At 72 hours of age , the FiO_2% was (73 ±20.9) in the cases treated with and (72.5 ±17.7) in the cases treated without. This difference was statistically not significant .

At 96 hours of age , the FiO_2% was (66.8 ±22.5) in the cases treated with and (77.5 ±31.8) in the cases treated without . We can perceive that there is a trend towards decreasing the FiO_2% in the cases treated with more than in the cases treated without .

In the cases treated with surfactant ; the FiO_2% level was (92.3 ±14.4) in the starting settings , (73 ±20.9) at 72 hours of age and (66.8 ±22.5) at 96 hours of age . This difference was statistically very highly significant .

In the cases treated without , the FiO_2% level was (74.2 ±21.5) in the starting settings , (72.5 ±17.7) at 72 hours of age and (77.5 ±31.8) at 96 hours of age . We can perceive that there was a trend towards slight decreasing in the FiO_2% at 72 hours of age less than in the starting settings and increasing FiO_2% at 96 hrs. of age more than that at 72 hrs. of age .

* Table (18) shows that the ventilator index in the starting settings of ventilator was (1319.6 ± 625.7) in cases treated with and (816.7 ±499.3) in cases treated without . This difference was statistically significant .

At 72 hrs. of age , the V.I. was (1012.4 ±539.9) in cases treated with and (1292.5 ± 116.7) in cases treated without . This difference was statistically not significant .

At 96 hrs. of age , the V.I. was (918.5 ±496.9) in the cases treated with and (1825 ±1237.4) in cases treated without . We can perceive that there was a trend towards a higher level in the cases treated without .

In the cases treated with surfactant ; V.I. was (1319.6 ±625.7) in the starting setting, (1012.4 ± 539.9) at 72 hrs. of age and (918.5 ±496.9) at 96 hrs. of age . This difference was statistically highly significant .

In the cases treated without; V.I. was (816.7 ±499.3) in the starting settings , (1292.5 ± 116.7) at 72 hrs. of age and (1825 ±1237.4) at 96 hrs. of age . We can perceive that there was a trend towards increasing the V.I. at 96 hrs. > 72 hrs. > the starting settings in these cases .

* Table (19) shows that the MAP in the starting settings was (10.2 ±4.1) in the cases treated with surfactant and (7.8 ±3.4) in cases treated without . This difference was statistically not significant .

At 72 hrs. of age , the MAP was (8.4 ±3) in cases treated with and (15 ±4.5) in cases treated without.This difference was statistically highly significant.

At 96 hrs. of age , the MAP was (7.8 ±2.9) in the cases treated with and (10.1 ± 2.6) in cases treated without . We can perceive that there was a trend towards a higher level in the cases treated without .

In the cases treated with , MAP was (10.2 ±4.1) in the starting settings , (8.4 ± 3) at 72 hrs. of age and (7.8 ±2.9) at 96 hrs. of age . This difference was statistically significant .

In the cases treated without , the MAP was (7.8 ±3.4) in the starting settings , (15 ±4.5) at 72 hrs. of age and (10.1 ±2.6) at 96 hrs. of age . We can perceive that there was a trend towards increasing the MAP at 72 hrs. of age > the starting settings then decreasing at 96 hrs. of age < 72 hrs. of age .

* Table (20) shows that the FiO_2 (%) in the starting settings was (88.5 ± 17.2) in the cases received a single dose of surfactant and (95.9 ±10) in cases received multiple doses. This difference was statistically significant .

At 72 hrs. of age , FiO_2 (%) was (76.1 ±19.2) in cases received a single dose and (71.2 ± 22.2) in cases received multiple doses. This difference was statistically not significant .

At 96 hrs. of age , the FiO_2 (%) was (68.6 ±20.1) in the cases received a single dose and (62.9 ±24.2) in cases received multiple doses . This difference was statistically not significant .

In cases received a single dose, FiO_2 (%) was (88.5 ±17.2) in the starting settings , (76.1 ±19.2) at 72 hrs. of age and (68.6 ±20.1) at 96 hrs. of age . This difference was statistically significant .

In the cases received multiple doses , FiO_2 (%) was (95.9 ±10) in the starting settings , (71.2 ±22.2) at 72 hrs. of age and (62.9 ±24.2) at 96 hrs. of age . This difference was statistically very highly significant .

In cases received multiple doses , when comparing the FiO_2 (%) in the starting settings and at 72 hrs. of age . The difference was statistically significant ($t = 4.422$, $p < 0.05$). And when comparing FiO_2 (%) in the starting settings and at 96 hrs. of age. The difference was statistically highly significant ($t = 5.844$, $p < 0.01$) .

* Table (21) shows that V.I. in the starting settings was (1148 ±603.8) in the cases received a single dose and (1485.1 ± 611.5) in cases received multiple doses. This difference was statistically significant .

At 72 hrs. of age , V.I. was (1192.2 ±543.9) in cases received a single dose and (911.2 ±527.5) in cases received multiple doses. This difference was statistically not significant .

At 96 hrs. of age , V.I. was (937.1 ±282.6) in the cases received a single dose and (885.9 ± 560) in cases received multiple doses. This difference was statistically not significant .

In cases received a single dose , V.I. was (1148 ±603.8) in the starting settings , (1192.2 ± 543.9) at 72 hrs. of age and (937.1 ±282.6) at 96 hrs. of age. This difference was statistically not significant .

In the cases received multiple doses , V.I. was (1485.1 ±611.5) in the starting settings , (911.2 ±527.5) at 72 hrs. of age and (885.9 ±560) at 96 hrs. of age . This difference was statistically very highly significant .

* Table (22) shows that MAP in the starting settings was (10 ±5.1) in the cases received a single dose and (10.4 ±3) in cases received multiple doses. This difference was statistically not significant .

At 72 hrs. of age , the MAP was (9.3 ±3) in cases received a single dose and (7.9 ± 3) in cases received multiple doses. This difference was statistically not significant .

At 96 hrs. of age , the MAP was (8.1 ±2.1) in the cases received a single dose and (7.6 ± 3.1) in cases received multiple doses. This difference was statistically not significant .

In cases received a single dose , the MAP was (10 ±5.1) in the starting settings, (9.3 ±3) at 72 hrs. of age and (8.1 ±2.1) at 96 hrs. of age . This difference was statistically not significant .

In the cases received multiple doses , the MAP was (10.4 ±3) in the starting settings, (7.9 ± 3) at 72 hrs. of age and (7.6 ±3.1) at 96 hrs. of age. This difference was statistically highly significant .

* Table (23) shows that the FiO_2 (%) in the starting settings was (81.8 ± 19.6) in mild cases of RDS and (96.5 ±9) in severe cases . This difference was statistically highly significant .

At 72 hrs. of age , FiO_2 (%) was (51.3 ±10.3) in mild cases and (76.7 ±19.3) in severe cases . This difference was statistically highly significant .

At 96 hrs. of age , the FiO_2 (%) was (51.7 ±16.1) in mild cases and (68.7 ±23.7) in severe cases . This difference was statistically not significant .

In mild cases of RDS , FiO_2 (%) was (81.8 ±19.6) in the starting settings , (51.3 ±10.3) at 72 hrs. of age and (51.7 ±16.1) at 96 hrs. of age . This difference was statistically highly significant . When comparing FiO_2 (%) in the starting settings and at 72 hrs.of age the difference was statistically significant ($t = 4.041$, $p < 0.05$) . And when comparing FiO_2 (%) in the

starting settings and at 96 hrs. of age . The difference was statistically significant ($t = 5.737$, $p < 0.05$).

In severe cases of RDS , FiO_2 (%) was (96.5 $\pm$9) in the starting settings, (76.7 $\pm$ 19.3) at 72 hrs. of age . And (68.7 $\pm$23.7) at 96 hrs. of age . This difference was statistically very highly significant .

* Table (24) shows that V.I. in the starting settings was (935.9 $\pm$380.3) in mild cases and (1494.4 $\pm$669.6) in severe cases. This difference was statistically highly significant .

At 72 hrs. of age , the V.I. was (740 $\pm$210.4) in mild cases and (1084.1 $\pm$548.5) in severe cases . This difference was statistically significant .

At 96 hrs. of age , V.I. was (606.7 $\pm$222.8) in mild cases and (1044.3 $\pm$ 626.1) in severe cases . This difference was statistically significant .

In mild cases the V.I. was (935.9 $\pm$380.3) in the starting settings , (740 $\pm$ 210.4) at 72 hrs. of age and (606.7 $\pm$222.8) at 96 hrs. of age . This difference was statistically not significant .

In severe cases , the V.I. was (1494.4 $\pm$669.6) in the starting settings , (1084.1 $\pm$ 548.5) at 72 hrs. of age . And (1044.3 $\pm$26.1) at 96 hrs. of age . This difference was statistically significant .

* Table (25) shows that MAP in the starting settings was (8.2 $\pm$2.8) in mild cases and (11.1 $\pm$ 4.5) in severe cases . This difference was statistically highly significant .

AtT 72 hrs. of age , the MAP was (6.6 $\pm$1.3) in mild cases and (9.3 $\pm$ 3.6) in severe cases . This difference was statistically significant .

At 96 hrs. of age , the MAP was (5.6 $\pm$1.5) in mild cases and (8.4 $\pm$2.8) in severe cases . This difference was statistically significant .

In mild cases the MAP was (8.2 $\pm$2.8) in the starting settings , (6.6 $\pm$ 1.3) at 72 hrs. of age and (5.6 $\pm$1.5) at 96 hrs. of age . This difference was statistically not significant .

In severe cases , the MAP was (11.1 $\pm$4.5) in the starting settings , (9.3 $\pm$ 3.6) at 72 hrs. of age and (8.4 $\pm$2.8) at 96 hrs. of age. This difference was statistically significant .

* Table (26) shows that the FiO_2 (%) in the starting settings was (93.3 $\pm$ 12.2) in cases < 30 weeks' gestation and (87.1 $\pm$19.2) in cases > 30 weeks' gestation. This difference was statistically not significant .

At 72 hrs. of age , FiO_2 (%) was (68.5 $\pm$19.5) in cases < 30 and (78.3 $\pm$20.9) in cases > 30 . This difference was statistically not significant .

At 96 hrs. of age , the FiO_2 (%) was (59.2 $\pm$21.5) in cases < 30 and (76.7 $\pm$22.9) in cases > 30 . This difference was statistically not significant .

In cases < 30 weeks' gestation , FiO_2 (%) was (93.3 ±12.2) in the starting settings , (68.5 ±19.5) at 72 hrs. of age and (59.2 ±21.5) at 96 hrs. of age . This difference was statistically very highly significant .

In cases > 30 weeks' gestation , FiO_2 (%) was (87.1 ±19.2) in the starting settings , (78.3 ±20.9) at 72 hrs. of age . and (76.7 ±22.9) at 96 hrs. of age . This difference was statistically significant .

* Table (27) shows that V.I. in the starting settings was (1216.9 ±470.3) in cases < 30 weeks' gestation and (1332.8 ± 781.1) in cases > 30 weeks' gestation. This difference was statistically not significant .

At 72 hrs. of age , the V.I. was (871.3 ±355.7) in cases < 30 and (1235.4 ±639.6) in cases > 30. This difference was statistically not significant .

At 96 hrs. of age , V.I. was (754.6 ±394.5) in cases < 30 and (1316.9 ± 716.1) in cases > 30. This difference was statistically significant .

In cases < 30,V.I. was (1216.9 ±470.3) in the starting settings , (871.3 ± 355.7) at 72 hrs. of age and (754.6 ±394.5) at 96 hrs. of age . This difference was statistically highly significant .

In cases > 30 , the V.I. was (1332.8 ±781.1) in the starting settings , (1235.4 ± 639.6) at 72 hrs. of age and (1316.9 ±716.1) at 96 hrs. of age . This difference was statistically not significant .

* Table (28) shows that MAP in the starting settings was (9.6 ±3.2) in cases < 30 weeks' gestation and (10.4 ±5) in cases > 30 weeks' gestation. This difference was statistically not significant .

At 72 hrs. of age , MAP was (8 ±3.3) in cases < 30 and (9.9 ±3.5) in cases > 30. this difference was statistically not significant .

At 96 hrs. of age , MAP was (6.8 ±2.5) in cases < 30 and (9.6 ±2.5) in cases > 30. This difference was statistically significant .

In cases < 30 , MAP was (9.6 ±3.2) in the starting settings , (8 ±3.3) at 72 hrs. of age and (6.8 ±2.5) at 96 hrs. of age . This difference was statistically significant .

In cases > 30 , MAP was (10.4 ±5) in the starting settings , (9.9 ±3.5) at 72 hrs. of age and (9.6 ± 2.5) at 96 hrs. of age . This difference was statistically not significant .

* Table (29) shows that the FiO_2 (%) in the starting settings was (87.4 ± 18.8) in cases with cord blood α_1- AT level < 200 mg / dl and (95.6 ±8.6) in cases with > 200 . This difference was statistically significant .

At 72 hrs. of age, FiO_2 (%) was (68.8 ±21) in cases < 200 and (78.1 ±19.1) in cases > 200 . This difference was statistically not significant .

At 96 hrs. of age, the FiO_2 (%) was (66.5 ±22.6) in cases < 200 and (67.8 ±24.5) in cases > 200 . This difference was statistically not significant .

In cases with card blood α_1- AT level < 200 , FiO_2 (%) was (87.4 ± 18.8) in the starting settings , (68.8 ±21) at 72 hrs. of age and (66.5 ±22.6) at 96 hrs. of age . This difference was statistically very highly significant .

In cases with cord blood α_1- AT level> 200mg/dl, FiO_2 (%) was (95.6 ±8.6) in the starting settings, (78.1 ±19.1) at 72 hrs. of age and (67.8 ± 24.5) at 96 hrs. of age . This difference was statistically very highly significant .

* Table (30) shows that V.I. in the starting settings was (1273.3 ±628.2) in cases with cord blood α_1-AT level < 200 mg / dl and (1220.3 ±655.9) in cases > 200 . This difference was statistically not significant .

At 72 hrs. of age , V.I. was (983 ±464.8) in cases < 200 and (1095.8 ± 606.4) in cases > 200 . This difference was statistically not significant .

At 96 hrs. of age , V.I. was (1007.7 ±669.2) in cases < 200 and (1036.7 ±569) in cases > 200 . This difference was statistically not significant .

In cases with cord blood α_1- AT level < 200 mg / dl , V.I. was (1273.3 ± 628.2) in the starting settings , (983 ±464.8) at 72 hrs. of age and (1007.7 ±669.2) at 96 hrs. of age . This difference was statistically significant .

In cases with cord blood α_1 - AT > 200 mg / dl , V.I. was (1220.3 ± 655.9) in the starting settings , (1095.8 ±606.4) at 72 hrs. of age and (1036.7 ± 569) at 96 hrs. of age . This difference was statistically not significant .

* Table (31) shows that MAP in the starting settings was (9.7 ±3.4) in cases with cord blood α_1-AT level < 200 mg / dl and (10.3 ±5.6) in cases > 200 This difference was statistically not significant .

At 72 hrs. of age , MAP was (8.2 ±2.4) in cases < 200 and (9.7 ±4.5) in cases > 200 . This difference was statistically not significant .

At 96 hrs. of age , MAP was (7.5 ±2.8) in cases < 200 and (8.7 ±3) in cases > 200 . This difference was statistically not significant .

In cases with cord blood α_1- AT level < 200 mg / dl , MAP was (9.7 ± 3.4) in the starting settings , (8.2 ±2.4) at 72 hrs. of age and (7.5 ±2.8) at 96 hrs. of age . This difference was statistically significant .

In cases with cord blood α_1- AT > 200 mg / dl , MAP was (10.3 ±5.6) in the starting settings , (9.7 ±4.5) at 72 hrs. of age and (8.7 ±3) at 96 hrs. of age . This difference was statistically not significant .

* Table (32) shows that the FiO_2 (%) in the starting settings was (92.4 ± 14.6) in cases with one minute APGAR < 6 and (87.7 ±17.6) in cases > 6 . This difference was statistically not significant .

At 72 hrs. of age , FiO_2 (%) was (78.5 ±19.5) in cases < 6 and (63.5 ±19) in cases > 6 . This difference was statistically significant .

At 96 hrs. of age , the FiO_2 (%) was (68.5 ±22.7) in cases < 6 and (53.3 ±30.5) in cases > 6 . This difference was statistically not significant .

In cases with one minute APGAR < 6 , FiO_2 (%) was (92.4 ±14.6) in the starting settings , (78.5 ±19.5) at 72 hrs. of age and (68.5 ±22.7) at 96 hrs. of age . This difference was statistically very highly significant .

In cases with one minute APGAR > 6 , FiO_2 (%) was (87.7 ±17.6) in the starting settings , (63.5 ±19) at 72 hrs. of age and (53.3 ±30.5) at 96 hrs. of age . This difference was statistically very highly significant .

* Table (33) shows that V.I. in the starting settings was (1310 ±720.7) in cases with one minute APGAR < 6 and (1150.6 ±437.7) in cases > 6 . This difference was statistically not significant .

At 72 hrs. of age , V.I. was (1115.6 ±540) in cases < 6 and (834 ± 461.9) in cases > 6 . This difference was statistically highly significant .

At 96 hrs. of age , V.I. was (1035.4 ±523.4) in cases < 6 and (881.3 ± 721.3) in cases > 6 . This difference was statistically not significant .

In cases with one minute APGAR < 6 , V.I. was (1310 ±720.7) in the starting settings , (1115.6 ±540) at 72 hrs. of age and (1035.4 ±523.4) at 96 hrs. of age . This difference was statistically not significant .

In cases with one minute APGAR > 6 , V.I. was (1150.6 ±437.7) in the starting settings , (834 ±461.9) at 72 hrs. of age and (881.3 ±721.3) at 96 hrs. of age . This difference was statistically not significant .

* Table (34) shows that MAP in the starting settings was (10.4 ±4.9) in cases with one minute APGAR < 6 and (9.1 ±2.1) in cases with one minute APGAR > 6 . This difference was statistically not significant .

At 72 hrs. of age , MAP was (9.7 ±3.8) in cases < 6 and (7.4 ±2.3) in cases > 6 . This difference was statistically significant .

At 96 hrs. of age , MAP was (8.7 ±3.1) in cases < 6 and (7 ±2.3) in cases > 6 . This difference was statistically not significant .

In cases with one minute APGAR < 6 , MAP was (10.4 ±4.9) in the starting settings , (9.7 ±3.8) at 72 hrs. of age and (8.7 ±3.1) at 96 hrs. of age . This difference was statistically not significant .

In cases with one minute APGAR > 6 , MAP was (9.1 ±2.1) in the starting settings , (7.4 ±2.3) at 72 hrs. of age and (7 ±2.3) at 96 hrs. of age . This difference was statistically significant .

* Table (35) shows that the FiO_2 (%) in the starting settings was (91.7 ± 15.2) in cases with R.R. at birth < 60 / minute and (87.6 ±17.6) in cases > 60 . This difference was statistically not significant .

At 72 hrs. of age , FiO_2 (%) was (72.1 ±20.1) in cases < 60 and (75.8 ±22.7) in cases > 60 . This difference was statistically not significant .

At 96 hrs. of age , the FiO_2 (%) was (65.7 ±24.2) in cases < 60 and (60.7 ±20.3) in cases > 60 . This difference was statistically not significant .

In cases with R.R. at birth < 60 minute , FiO_2 (%) was (91.7 ±15.2) in the starting settings , (72.1 ±20.1) at 72 hrs. of age and (65.7 ±24.2) at 96 hrs. of age . This difference was statistically very highly significant .

In cases with R.R. at birth > 60 minute , FiO_2 (%) was (87.6 ±17.6) in the starting settings , (75.8 ±22.7) at 72 hrs. of age and (60.7 ±20.3) at 96 hrs. of age . This difference was statistically highly significant .

* Table (36) shows that the V.I. in the starting settings was (1229.2 ± 529.6) in cases with R.R. at birth < 60 / minute and (1346.7 ±785.7) in cases > 60 . This difference was statistically not significant .

At 72 hrs. of age , V.I. was (943.8 ±450.9) in cases < 60 and (1345.8 ± 683.4) in cases > 60 . This difference was statistically not significant .

At 96 hrs. of age , V.I. was (948.1 ±615.5) in cases < 60 and (1062.8 ± 617.2) in cases > 60 . This difference was statistically not significant .

In cases with R.R. at birth < 60 minute , V.I. was (1229.2 ±529.6) in the starting settings , (943.8 ± 450.9) at 72 hrs. of age and (948.1 ±615.5) at 96 hrs. of age . This difference was statistically not significant .

In cases with R.R. at birth > 60 minute , V.I. was (1346.7 ±785.7) in the starting settings , (1345.8 ±683.4) at 72 hrs. of age and (1062.8 ±617.2) at 96 hrs. of age . This difference was statistically not significant .

* Table (37) shows that MAP in the starting settings was (9.7 ±4.2) in cases with R.R. at birth < 60 / minute and (10.4 ±4.1) in cases > 60 . This difference was statistically not significant .

At 72 hrs. of age , MAP was (8.5 ±3.3) in cases < 60 and (10.2 ±4.1) in cases > 60 . This difference was statistically not significant .

At 96 hrs. of age , MAP was (7.7 ±2.7) in cases < 60 and (8.5 ±3.3) in cases > 60 . This difference was statistically not significant .

In cases with R.R. at birth < 60 minute , MAP was (9.7 ±4.2) in the starting settings , (8.5 ±3.3) at 72 hrs. of age and (7.7 ±2.7) at 96 hrs. of age . This difference was statistically not significant .

In cases with R.R. at birth > 60 minute , MAP was (10.4 ±4.1) in the starting settings , (10.2 ±4.1) at 72 hrs. of age and (8.5 ±3.3) at 96 hrs. of age. This difference was statistically not significant .

* Table (38) shows that the one minute APGAR was (7.7 ±1.5) in preterm controls and (5.1 ± 1.9) in cases of R.D.S. This difference was statistically very highly significant .

The 5 minutes APGAR was (9.2 ±0.9) in preterm controls and (7.1 ± 1.6) in cases of R.D.S. This difference was statistically very highly significant .