Results

This is a prospective study preformed up on 30 infants (VLBW) with birth weight ≤1500 gm and gestational age ≤32 week which were classified into 3 groups :

- The first group (exclusively breast feeding infants) : including 10 VLBW infants who had fed maternal breast feeding only .
- The second group (artificially feeding infants) : including 10 VLBW infants who had fed artificial milk only.
- The third group (mixed feeding infants) : including 10 VLBW infants who had fed both maternal breast milk and artificial milk in different proportion .

The infants in all groups with gestational age less or equal to 32 week were divided in to 2 groups

- < 30 week with a mean gestational age of 28.22 (± 0.667) .
- ≥ 30 week with a mean gestational age of 31.190 (± 0.873).

The infants in all groups with birth weight less or equal to 1500 gm were divided into 2 groups :

- < 1200 gm with a mean birth weight of 974 (±237).
- ≥ 1200 gm with a mean birth weight of 1367 (±105).

Table (3):

Comparison of gestational age& birth weight among all studied groups:

Variables	Breast N =10		Artificial N =10		Mixed N =10		Total N =30		Mean ± SD	Pv
	NO	%	NO	%	NO	%	NO	%		
Gestational age (weeks) < 30	2	20.0	5	50.0	2	20.0	9	30.0	28.222 ± 0.667	0.013
≥ 30	8	80.0	5	50.0	8	80.0	21	70.0	31.190 ± 0.873	< 0.05
Birth weight (grams) < 1200	1	10.0	5	50.0	2	20.0	8	26.6	974 ± 237	0.023
≥ 1200	9	90.0	5	50.0	8	80.0	22	73.4	1367 ± 105	0.031

* P>0.05:non significant *P<0.05: significant * P<0.01:highly significant

Figure (1) :

Comparison of Mean ± SD of gestational age (weeks) among all studied groups:

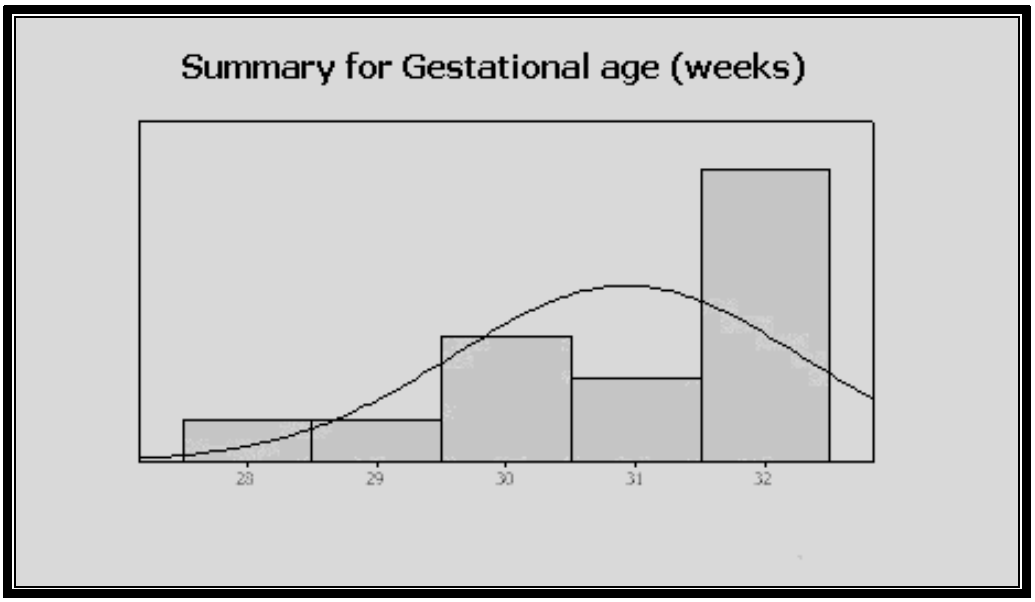

Figure (2) :

Comparison of Mean ± SD of birth weight (grams) among all studied groups:

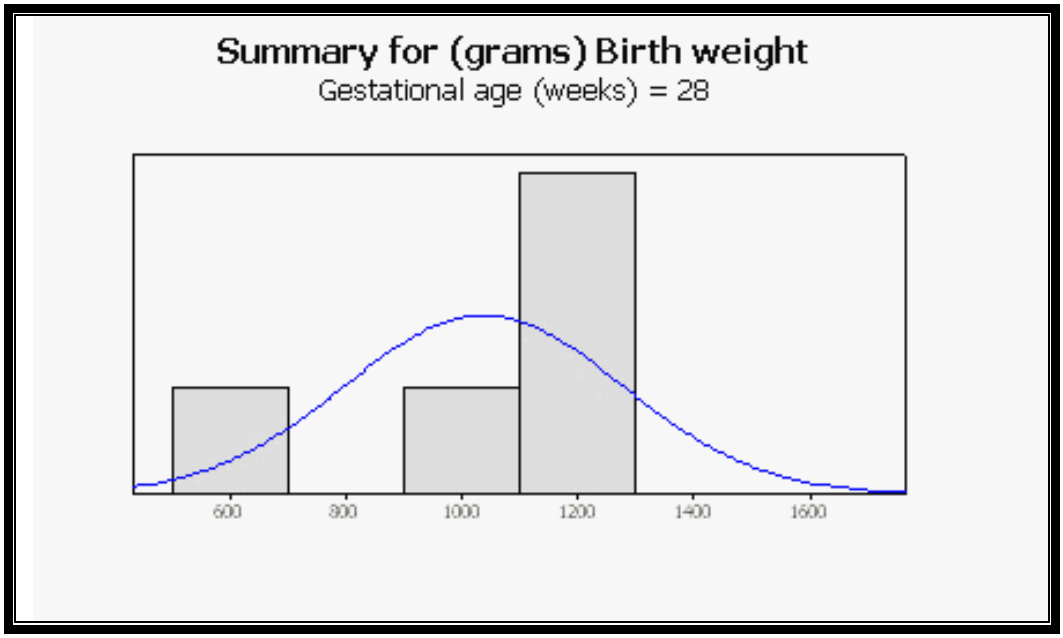

Table (4):

Comparison of the study groups according to sex and multiple births:

	Breast N =10		**Artificial** N =10		**Mixed** N =10		**Total** N =30		**Mean**	**Pv**
	NO	%	NO	%	NO	%	NO	%		
Sex Male	3	30.0	2	20.0	4	40.0	9	30.0	0.93	> 0.05
Female	7	70.0	8	80.0	6	60.0	21	70.0		
Multiple Births Yes	4	40.0	7	70.0	6	60.0	17	56.3	1.36	> 0.05
No	6	60.0	3	30.0	4	40.0	13	43.7		

* P>0.05:non significant *P<0.05: significant * P<0.01:highly significant

The table shows no significant statistical difference (P>0.05)among all groups included in the study

Table (5):

Comparison of the study groups according to mode of delivery:

Mode of delivery	Breast N =10		Artificial N =10		Mixed N =10		Total N =30		Mean± SD	Pv
	NO	%	NO	%	NO	%	NO	%		
NVD	3	30.0	1	10.0	5	50.0	21	70.0	29.889 ± 1.691	0.15
C.S	7	70.0	9	90.0	5	50.0	9	30.0	30.476 ± 1.569	0.07

* P>0.05:non significant *P<0.05: significant * P<0.01:highly significant

Figure (3) :

Comparison of the study groups according to mode of delivery

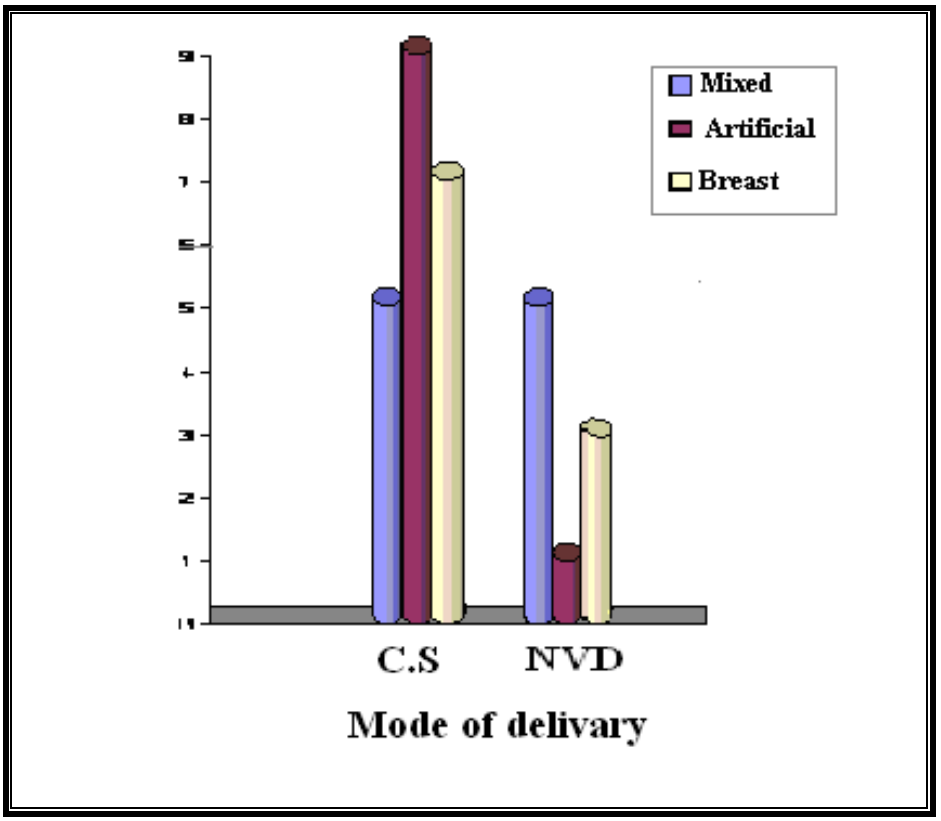

Table (6)

Comparison of the study groups according to ventilation:

Ventilation	Breast N =10		Artificial N =10		Mixed N =10		Total N =30		Mean± SD	Pv
	NO	%	NO	%	NO	%	NO	%		
M V	2	20.0	3	30.0	3	30.0	8	26.7	29.250 ± 1.488	0.466
Nasal	1	10.0	4	40.0	3	30.0	8	26.7	30.250 ± 1.753	0.152
NO	7	70.0	3	30.0	4	40.0	14	46.6	30.929 ± 1.328	< 0.05

* P>0.05:non significant *P<0.05: significant * P<0.01:highly significant

Figure (4) :

Comparison of the study groups according to ventilation:

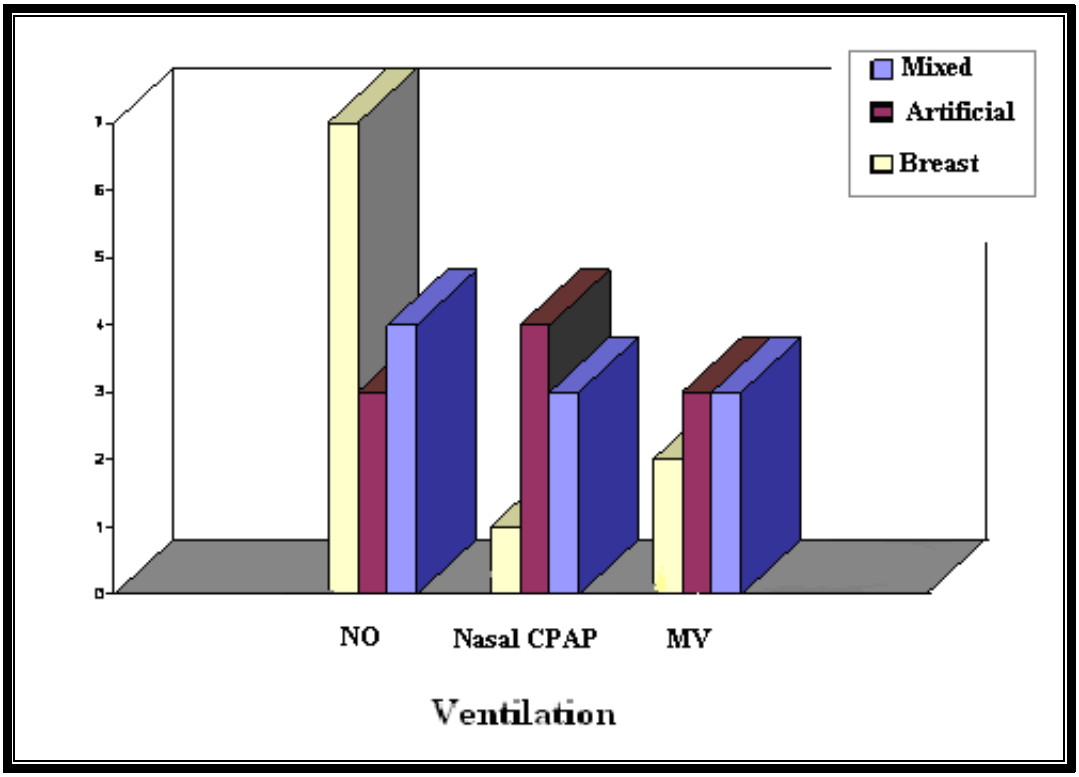

Table (7):

Comparison of the study groups according to presentation

Presentation	Breast N =10		Artificial N =10		Mixed N =10		Total N =30		Mean± SD	Pv
	NO	%	NO	%	NO	%	NO	%		
RDS	1	10.	3	30.	3	30.	7	23.	29.000 ± 1.633	0.097
RD	3	30.	4	40.	3	30.	10	33.	30.800 ± 1.317	0.05
RDS+ Jaundice	2	20.	1	10.	1	10.	4	13.	30.250 ± 1.708	0.705
Observation	1	10.	0	0.0	0	0.0	1	3.	32.000 ± *	*
N.S	0	0.0	1	10.	1	10.	2	6.	31.00 ± 0.707	*
IDM	1	10.	0	0.0	0	0.0	1	3.	32.000 ± *	*
Jaundice	2	20.	1	10.	1	10.	4	13.	30.000 ± 1.826	0.608
Apnea of prematurity	0	0.0	0	0.0	1	10.	1	3.	30.000 ± *	*

* P>0.05:non significant *P<0.05: significant * P<0.01:highly significant

Figure (5)

Comparison of the study groups according to presentation :

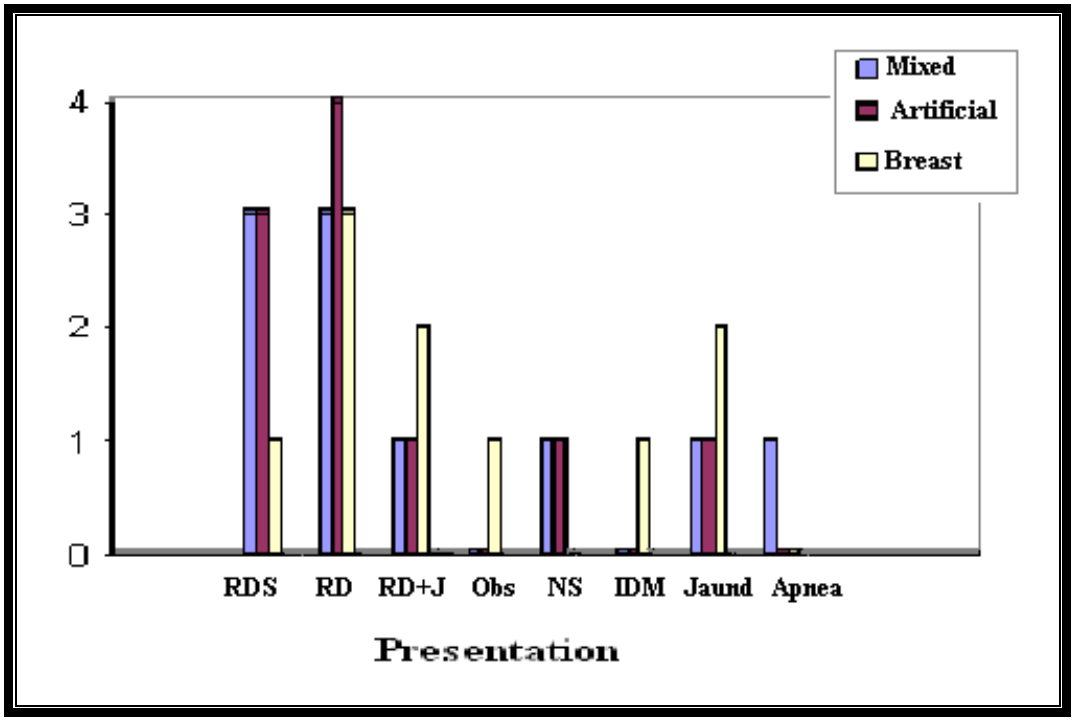

Table (8)

Comparison of the study groups according to Start of feeding and continuity of feeding :

variables	Breast N =10		Artificial N =10		Mixed N =10		Total N =30		Mean	Pv
	NO	%	NO	%	NO	%	NO	%		
Start of feeding (days) 1st	2	20.0	1	10.0	0	0.0	3	10.0	14.46	> 0.05
2nd	3	30.0	0	0.0	4	40.0	7	23.3		
3rd	3	30.0	3	30.0	1	10.0	7	23.3		
4th	1	10.0	3	30.0	1	10.0	5	16.7		
5th	0	0.0	1	10.0	2	20.0	3	10.0		
6th	0	0.0	1	10.0	0	0.0	1	3.3		
7th	1	10.0	0	0.0	1	10.0	2	6.7		
8th	0	0.0	1	10.0	1	10.0	2	6.7		
Continuity of feeding smooth	10	100.0	0	0.0	4	40.0	14	46.7	20.36	< 0.01
Interrupted	0	0.0	10	100.0	6	60.0	16	53.3		

* P>0.05:non significant *P<0.05: significant * P<0.01:highly significant

Figure (6) :

Comparison of the study groups according to Start of feeding :

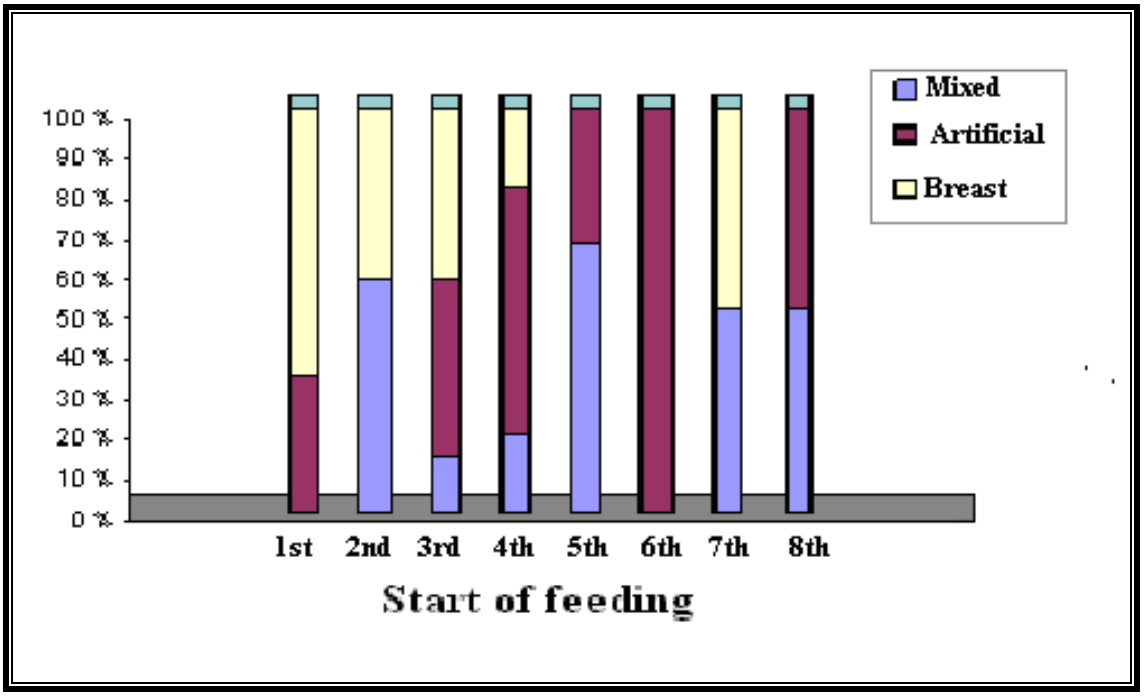

Figure (7) :

Comparison of the study groups according to continuity of feeding

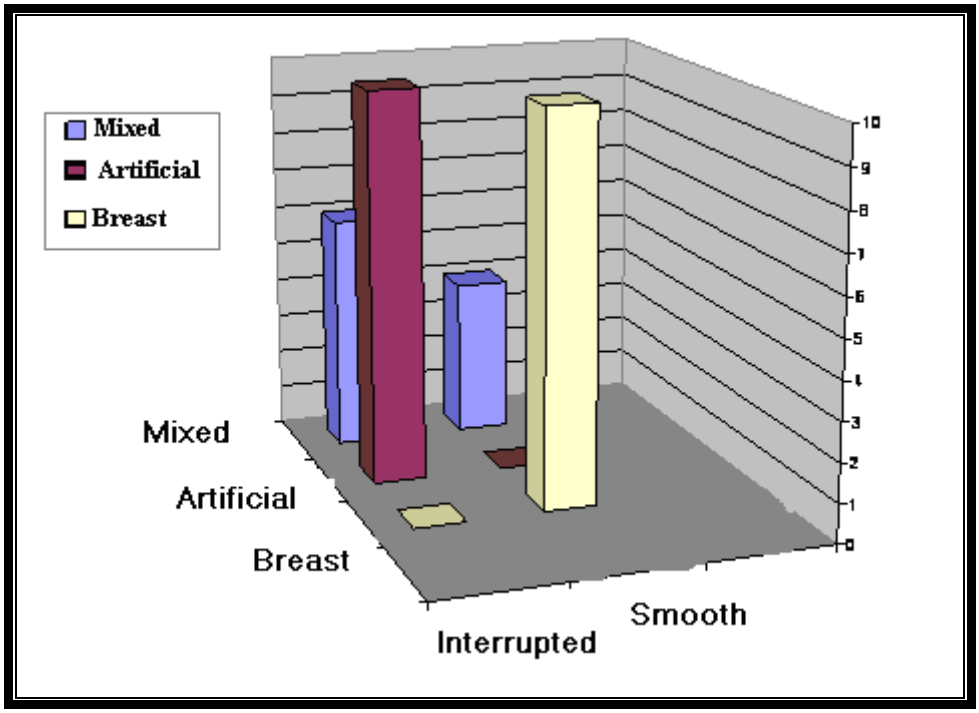

Table (9): Cause of interrupted feeding

Cause of interrupted feeding	Breast N =10		Artificial N =10		Mixed N =10		Total N =30	
	NO	%	NO	%	NO	%	NO	%
N0	10	100.0	0	0.0	4	40.0	14	46.7
Abd-distention	0	0.0	5	50.0	1	10.0	6	20.1
A bd-distention &Apnea	0	0.0	1	10.0	0	0.0	1	3.3
Residual	0	0.0	4	40.0	4	40.0	8	26.6
Residual & A bd-distention	0	0.0	0	0.0	1	10.0	1	3.3

Table (10):

Comparison of the study groups according to incidence of NEC

NEC	Breast N =10		Artificial N =10		Mixed N =10		Total N =30		Mean	Pv
	NO	%	NO	%	NO	%	NO	%		
NO	10	100.0	8	80.0	10	100.0	28	93.4	4.29	< 0.05
Suspected	0	0.0	1	10.0	0	0.0	1	3.3		
Definite	0	0.0	1	10.0	0	0.0	1	3.3		

* P>0.05:non significant *P<0.05: significant * P<0.01:highly significant

Figure (8) :

Comparison of the study groups according to incidence of NEC

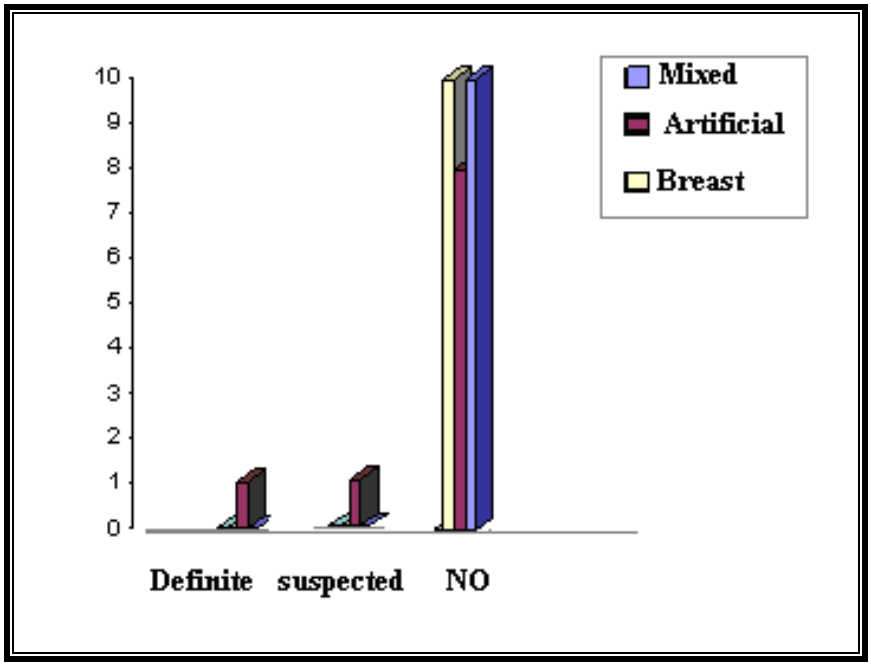

Table (11):

Distribution of the study group according to type of feeding and Sepsis

Sepsis	Breast N =10		Artificial N =10		Mixed N =10		Total N =30		Mean	Pv
	NO	%	NO	%	NO	%	NO	%		
CBC Normal	6	60.0	2	20.0	5	50.0	13	43.3	6.92	< 0.05
Leucocytosis	1	10.0	6	60.0	2	20.0	9	30.0		
Thrombocytopenia	3	30.0	2	20.0	3	30.0	8	26.7		
CRP -ve	4	40.0	4	40.0	3	30.0	11	36.7	0.29	> 0.05
+ve	6	60.0	6	60.0	7	70.0	19	63.3		
Blood culture No growth	10	100.	7	70.0	9	90.0	26	86.7	5.54	> 0.05
Kelebseilla	0	0.0	1	10.0	0	0.0	1	3.3		
Candida	0	0.0	1	10.0	0	0.0	1	3.3		
Gram –ve bacilli	0	0.0	1	10.0	1	10.0	2	6.7		

* P>0.05:non significant *P<0.05: significant * P<0.01:highly significant

The table shows no statistically significant difference(P>0.05) among the groups except in complete blood picture which shows a significant difference(P<0.01) among all the studied groups .

Table (12):

Relation between gestational age and NEC

NEC	< 30 N = 9		≥ 30 N = 21		Total N =30		Mean	Pv
	NO	%	NO	%	NO	%		
NO	7	77.8	21	100.0	28	93.4	5.12	< 0.05
Suspected	1	11.1	0	0.0	1	3.3		
Definite	1	11.1	0	0.0	1	3.3		

* P>0.05:non significant *P<0.05: significant * P<0.01:highly significant

The table shows a statistically significant difference (P<0.05) among the groups **.**

Figure (9) :

Relation between gestational age and NEC

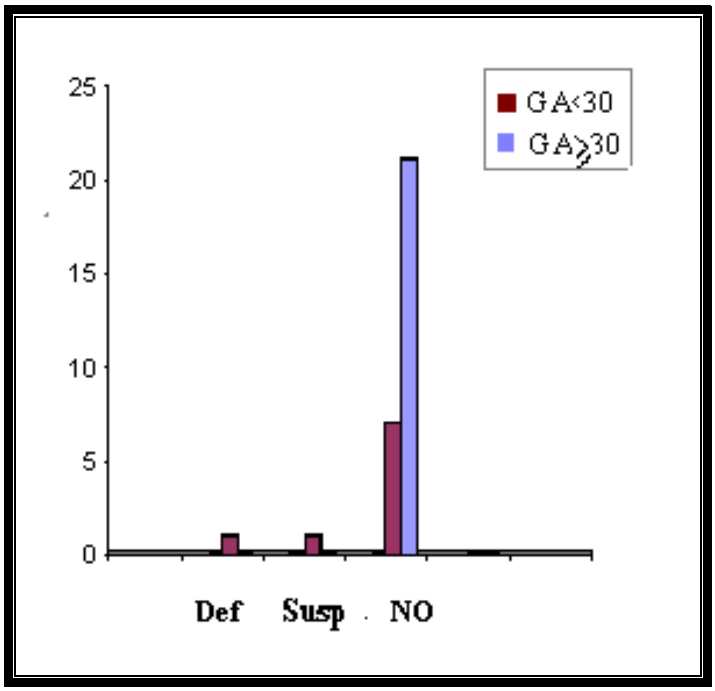

Table (13):

Relation between continuity of feeding and presentation

Presentation	Smooth		Interrupted	
	NO	%	NO	%
RDS	1	14.3	6	85.7
RD	4	40	6	60
RDS+ Jaundice	3	75	1	25
Observation	1	100	0	0.0
N.S	1	50	1	50
IDM	1	100	0	0.0
Jaundice	2	50	2	50
Apnea of prematurity	0	0	1	100

Figure (10) :

Relation between continuity of feeding and presentation

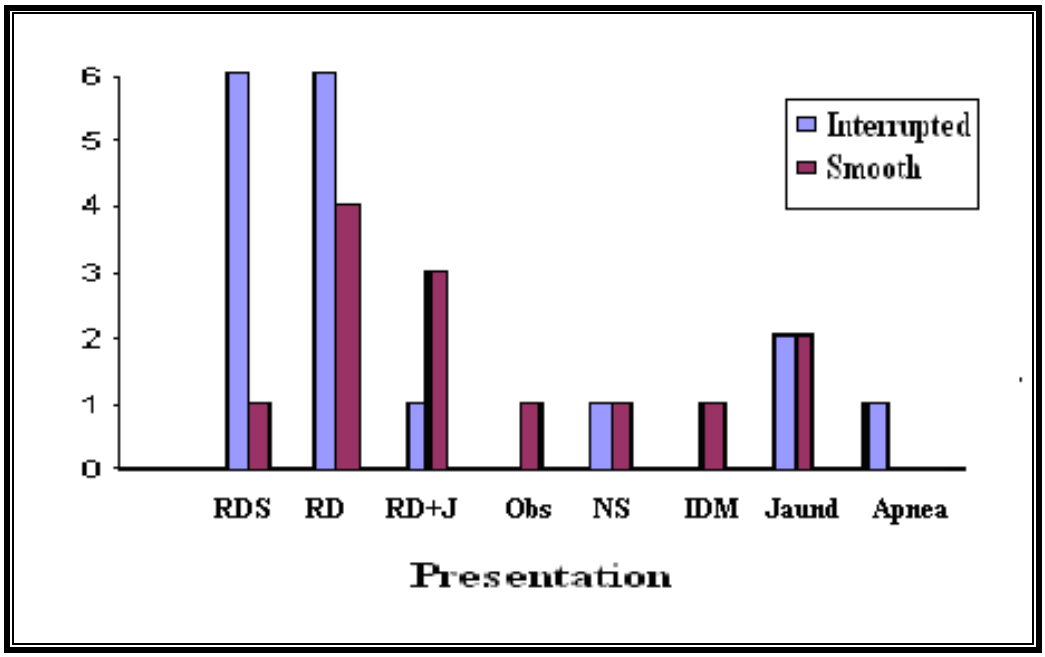

Table (14):

Relation between feeding and ventilation

	MV N =8		Nasal CPAP N =8		NO N =14		Total N =30		Mean	Pv
	NO	%	NO	%	NO	%	NO	%		
Start of feeding (days) 1st	0	0.0	1	12.5	2	14.3	3	10.0	23.6	< 0.05
2nd	1	12.5	0	0.0	6	42.9	7	23.3		
3rd	0	0.0	4	50.0	3	21.4	7	23.3		
4th	1	12.5	1	12.5	3	21.4	5	16.7		
5th	2	25.0	1	12.5	0	0.0	3	10.0		
6th	1	12.5	0	0.0	0	0.0	1	3.3		
7th	1	12.5	1	12.5	0	0.0	2	6.7		
8th	2	25.0	0	0.0	0	0.0	2	6.7		
Continuity of feeding Smooth	3	37.5	2	25.0	9	64.3	14	46.7	3.53	> 0.05
Interrupted	5	62.5	6	75.0	5	35.7	16	53.3		

* P>0.05:non significant *P<0.05: significant * P<0.01:highly significant

Figure (11) :

Relation between ventilation and start of feeding

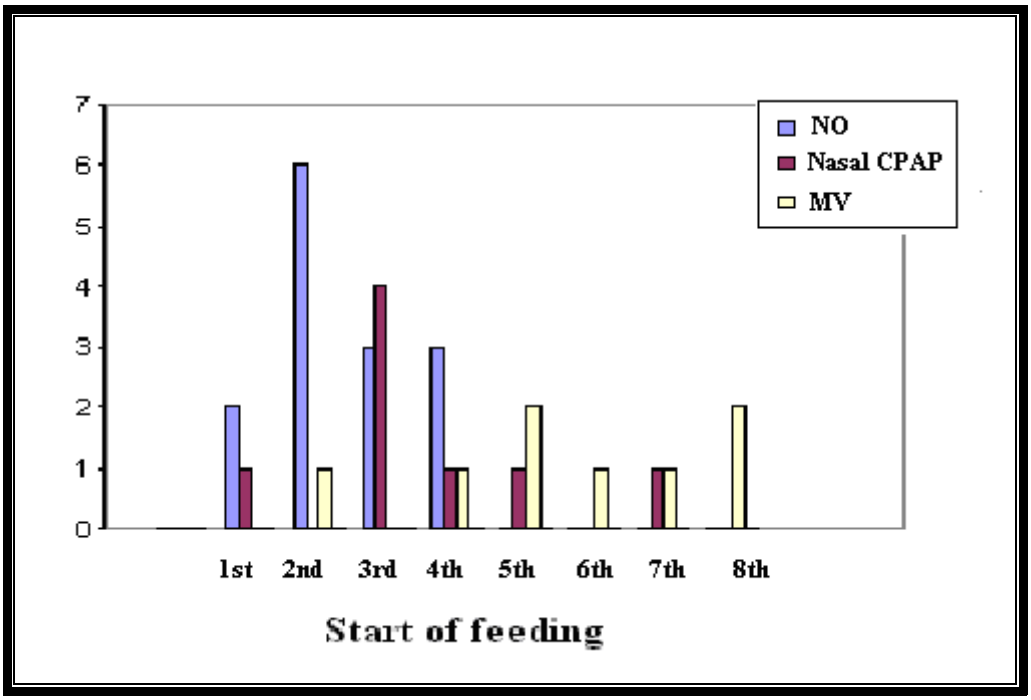

Table (15):

Distribution of the study groups according to gestational age and feeding

	< 30 N = 9		**≥ 30** N = 21		**Total** N =30		**Mean**	**Pv**
	NO	%	NO	%	NO	%		
Start of feeding (days)	1	11.1	2	9.5	3	10.0	11.06	> 0.05
2nd	1	11.1	6	28.6	7	23.3		
3rd	1	11.1	6	28.6	7	23.3		
4th	1	11.1	4	19.1	5	16.7		
5th	0	0.0	3	14.2	3	10.0		
6th	1	11.1	0	0.0	1	3.3		
7th	2	22.3	0	0.0	2	6.7		
8th	2	22.3	0	0.0	2	6.7		
Continuity of feeding Smooth	2	22.3	12	56.2	14	46.6	5.20	< 0.05
Interrupted	7	77.7	9	43.8	16	53.4		

* P>0.05:non significant *P<0.05: significant * P<0.01:highly significant

The table shows no statistically significant difference of day of start of feeding (P>0.05) among the groups and shows a significant statistical difference of continuity of feeding (P<0.05) among all the studied groups

Table (16):

Distribution of the study groups according to birth weight and feeding

	< 1200 N = 8		**≥ 1200** N = 22		**Total** N =30		**Mean**	**Pv**
	NO	%	NO	%	NO	%		
Start of feeding (days) 1st	1	12.5	2	9.1	3	10.0	11.18	> 0.05
2nd	1	12.5	6	27.3	7	23.3		
3rd	1	12.5	6	27.3	7	23.3		
4th	1	12.5	4	18.1	5	16.7		
5th	0	0.0	3	13.6	3	10.0		
6th	1	12.5	0	0.0	1	3.3		
7th	1	12.5	1	4.6	2	6.7		
8th	2	25.0	0	0.0	2	6.7		
Continuity of feeding Smooth	1	12.5	13	59.1	14	46.7	5.12	< 0.05
Interrupted	7	87.5	9	40.9	16	53.3		

* P>0.05:non significant *P<0.05: significant * P<0.01:highly significant

The table shows no statistically significant difference of day of start of feeding (P>0.05) among the groups and shows a significant statistical difference of continuity of feeding (P<0.05) among all the studied groups

Figure (12) :

Relation between birth weight and continuity of feeding

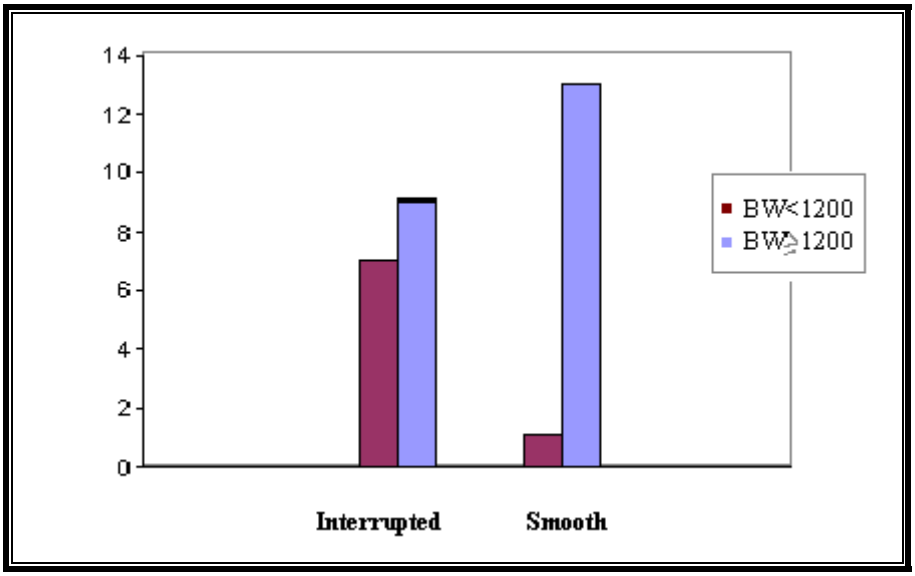

Table (17):
Relation between birth weight and NEC

NEC	< 1200 N = 8		≥ 1200 N = 22		Total N =30		Mean	Pv
	NO	%	NO	%	NO	%		
NO	6	75.5	22	100.0	28	93.4	5.89	< 0.05
Suspected	1	12.5	0	0.0	1	3.3		
Definite	1	12.5	0	0.0	1	3.3		

* P>0.05:non significant *P<0.05: significant * P<0.01:highly significant

This table shows a significant statistical difference (P<0.05) among all groups included in the study.

Figure (13) :

Relation between birth weight and NEC

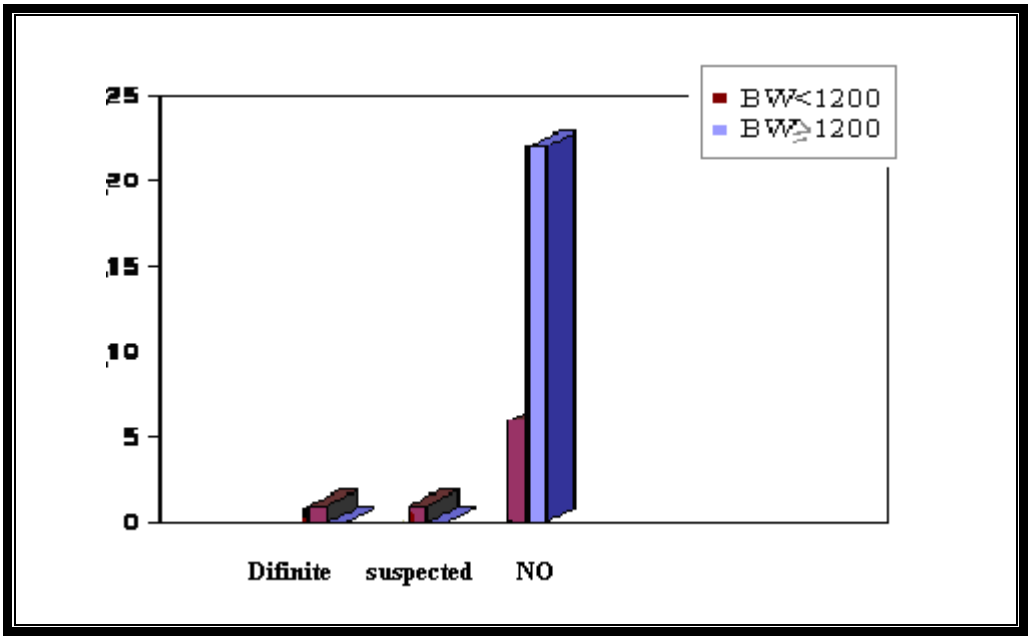

Table (18):

Percent distribution of different variables and NEC

variable		Normal 28 case		Definite 1case		Suspected 1case	
		No	%	No	%	No	%
sex	Male	8	28.8	1	100	0	0.00
	female	20	71.2	0	0.00	1	100
Mode of delivery	NVD	20	71.2	0	0.00	1	100
	CS	8	28.8	1	100	0	0.00
Multiple births	Single	12	43.2	1	100	0	0.00
	multiple	16	56.8	0	0.00	1	100
Clinical presentation	RDS	5	17.2	1	100	0	0.00
	other	23	82.8	0	0.00	1	100

Table (19):

Relation between day of first feeding and the onset of NEC

variable		Definite		Suspected	
		No	%	No	%
Day of first feeding	first3day	0	0.00	1	100
	First week	0	0.00	0	0.00
	2nd week	1	100	0	0.00
Age of onset of NEC	first3day	0	0.00	0	0.00
	First week	0	0.00	1	100
	2nd week	1	100	0	0.00

Table (20):

Diagnosis of NEC

variable		Definite		Suspected	
		No	%	No	%
Feeding In tolerance	**+ve**	1	100	1	100
	-ve	0	0.00	0	0.00
Bloody stool		1	100	0	0.00
Stool culture	**+ve**	0	0.00	0	0.00
	-ve	0	0.00	100	100
CBC	**Leucocytosis**	1	100	1	100
	Thrombo - cytobenia	1	100	1	100
CRP	**+ve**	1	100	1	100
	-ve	0	0.00	0	0.00
Metabolic acidosis	**+ve**	1	100	1	100
	-v	0	0.00	0	0.00
Blood culture	**+ve**	1	100	0	0.00
	-ve	0	0.00	1	100
Radiological	**+ve**	1	100	0	0.00
	-ve	0	0.00	1	100

Table (21):

Over all incidence of NEC

NEC	NO	%
NO	28	94
Suspected	1	3
Definite	1	3

Figure (14) :
Over all incidence of NEC

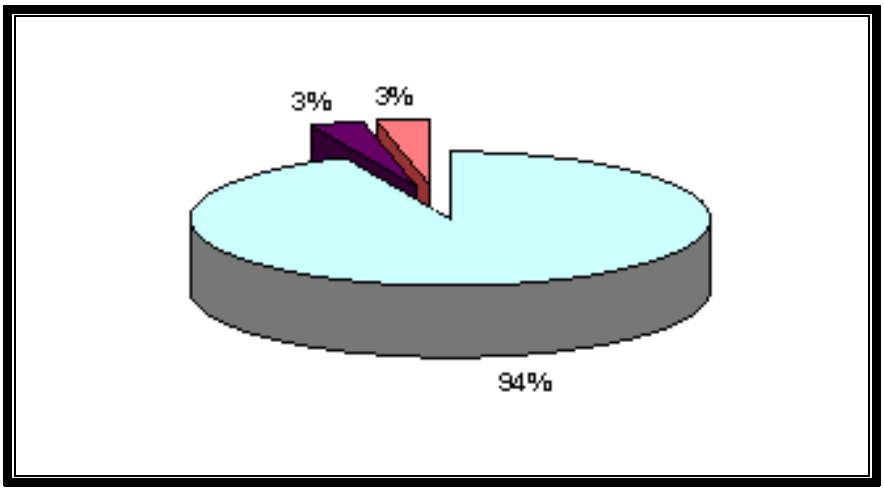

Table (22):

Treatment and prognosis of NEC

variable		Definite 1case		Suspected 1case	
		No	%	No	%
treatment	Medical	1	100	1	100
	surgical	0	0.0	0	0.0
prognosis	death	1	100	1	100