Results

The present study included 60 apparently healthy mothers of newborns delivered at shibin elkom teaching hospital and benha university hospital. The mothers were selected and divided into two equal groups according to gestational age:

Preterm Group1 : Included 30 mothers of preterm infants (<37 weeks of gestation), and their newborns and this group is further subdivided according to type of feeding into three sub groups.

1. exclusive breast feeding,
2. mixed feeding
3. exclusive formula feeding

Full term Group 2: Included 30 mothers of full term newborn (>37 weeks of gestation), and their newborns and this group is further subdivided according to type of feeding into three sub groups.

1. exclusive breast feeding,
2. mixed feeding
3. exclusive formula feeding

The results of this study have been statistically analyzed, summarized and depicted in the following tables.

Table (7): Descriptive data of full term group (maternal and birth data):

		Full term			
		Maximum	***Minimum***	***Mean***	***Standard Deviation***
mother Age (yrs)		42	20	29	6
mother weight (Kgs)		95.00	70.00	80.70	5.86
antenatal history	spontaneous preterm birth	-		-	
	multiple pregnancy	Count =2		Percentage 6.7%	
	premature rupture of membranes(PROM)	Count =3		Percentage 10.0%	
	preterm PROM	-		-	
	bicornate uterus	-		-	
	incompetent cervix	-		-	
	no problem	Count =25		Percentage 83.3%	
Order of Birth	1	Count =4		Percentage 13.3%	
	2	Count =8		Percentage 26.7%	
	3	Count =11		Percentage 36.7%	
	4	Count =6		Percentage 20.0%	
	5	Count =1		Percentage 3.3%	
Apgar score at 1 min		9	7	8	1
Apgar score at 5 min		10	9	10	1
Sex	female	Count =14		Percentage 46.7%	
	male	Count =16		Percentage 53.3%	
Gestational Age (wks)		42	38	39	1
Level of EGF ng/mL in maternal colostrum		143.75	65.46	115.04	19.91

Table (8): Descriptive data of full term group (anthropometric measurements):

	Minimum	***Maximum***	***Mean***	***Std. Deviation***
Weight at birth (Kgs)	2.60	3.90	3.1300	.32921
Length at birth (Cms)	46.3	52.0	49.177	1.4517
Head circumference at birth (Cms)	33.7	37.0	35.043	.7695
Weight at one month (Kgs)	3.4	4.8	3.928	.3481
Length at one month (Cms)	49.3	55.0	52.317	1.4534
Head circumference at one month (Cms)	35.5	39.0	36.940	.7650
Weight at two months (Kgs)	4.15	5.45	4.6933	.30590
Length at two months (Cms)	52.50	58.00	55.5467	1.48388
Head circumference at two months (Cms)	37.3	40.7	38.753	.7982
Weight at three months (Kgs)	4.95	6.30	5.4850	.31408
Length at three months (Cms)	56.00	61.50	58.6333	1.44134
Head circumference at three months (Cms)	39.00	43.00	40.7867	.86532

Table (9): Descriptive data of preterm group (maternal and birth data):

		preterm			
		Maximum	***Minimum***	***Mean***	***Standard Deviation***
mother Age (yrs)		41	19	28	6
mother weight (Kgs)		91.00	68.00	77.63	5.73
antenatal history	spontaneous preterm birth	Count =19		Percentage 63.3%	
	multiple pregnancy	Count =5		Percentage 16.7%	
	premature rupture of membranes(PROM)	-		-	
	preterm PROM	Count =3		Percentage 10.0%	
	bicornate uterus	Count =1		Percentage 3.3%	
	incompetent cervix	Count =2		Percentage 6.7%	
	no problem	-		-	
Order of Birth	1	Count =9		Percentage 30.0%	
	2	Count =10		Percentage 33.3%	
	3	Count =6		Percentage 20.0%	
	4	Count =4		Percentage 13.3%	
	5	Count =1		Percentage 3.3%	
Apgar score at 1 min		9	7	8	1
Apgar score at 5 min		10	8	9	1
Sex	female	Count =16		Percentage 53.3%	
	male	Count =14		Percentage 46.7%	
Gestational Age (wks)		36	33	35	1
Level of EGF ng/mL in maternal colostrum		245.80	106.59	181.25	34.51

Table (10): Descriptive data of preterm group (anthropometric measurments):

	Minimum	***Maximum***	***Mean***	***Std. Deviation***
Weight at birth (Kgs)	1.60	2.40	2.0217	.19813
Length at birth (Cms)	40.0	46.3	43.100	1.5490
Head circumference at birth (Cms)	28.5	33.0	31.247	1.1587
Weight at one month (Kgs)	2.3	3.1	2.640	.2167
Length at one month (Cms)	43.0	49.5	46.300	1.6354
Head circumference at one month (Cms)	30.5	35.5	33.393	1.2315
Weight at two months (Kgs)	3.15	4.00	3.3983	.22495
Length at two months (Cms)	47.00	54.00	49.7967	1.81744
Head circumference at two months (Cms)	32.3	37.5	35.247	1.2264
Weight at three months (Kgs)	3.90	4.85	4.2150	.23895
Length at three months (Cms)	50.50	57.50	53.4633	1.75568
Head circumference at three months (Cms)	35.00	40.00	37.3600	1.21502

Table (11): Comparison between full term and preterm groups regarding of maternal age and weight:

	maturity				***T-test***	***P value***	***Sig.***
	preterm		***full term***				
	Mean	***Standard Deviation***	***Mean***	***Standard Deviation***			
Mother Age (yrs)	28	6	29	6	1.079	.285	N.S.
Mother weight (Kgs)	77.63	5.73	80.70	5.86	2.051	.045	S.

This table shows no statistical significant difference between full term infant and preterm infant groups as regard of mother age while there was significant difference as regard of mother weight.

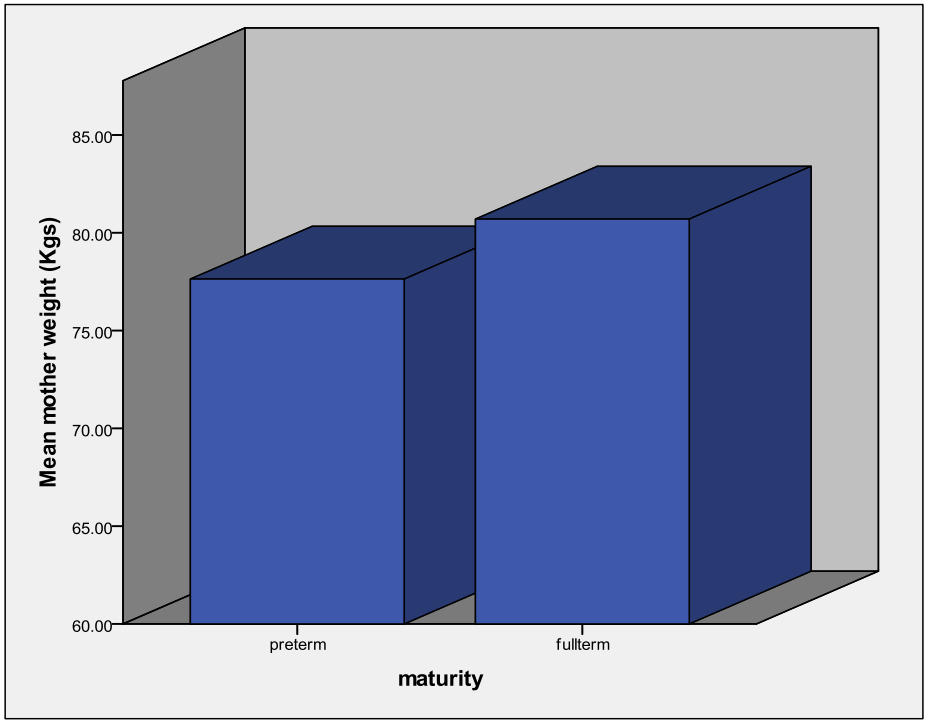


Figure (8): mean mother weight in full term and preterm group.

Table (12): comparison between full term and preterm groups regarding (infant gender, order of birth & mode of delivery of newborn):

		maturity				*Chi-square*	*P value*	*Sig.*
		preterm		*fullterm*				
		Count	*Percentage*	*Count*	*Percentage*			
Sex	female	16	53.3%	14	46.7%	.267	.606	N.S.
	male	14	46.7%	16	53.3%			
Order of Birth	1	9	30.0%	4	13.3%	4.016	.404	N.S.
	2	10	33.3%	8	26.7%			
	3	6	20.0%	11	36.7%			
	4	4	13.3%	6	20.0%			
	5	1	3.3%	1	3.3%			
Mode of delivery	normal vaginal	14	46.7%	17	56.7%	.601	.438	N.S.
	cesarean	16	53.3%	13	43.3%			

This table shows no statistical significant difference between full term and preterm group as regard (infant gender, order of birth & mode of delivery of newborn).

Table (13): comparison between full term and preterm groups regarding to antenatal history:

		maturity				***Chi-square***	***P value***	***Sig.***
		preterm		***full term***				
		Count	***Percentage***	***Count***	***Percentage***			
antenatal history	spontaneous preterm birth	19	63.3%	0	.0%	54.286	<.001	H.S.
	multiple pregnancy	5	16.7%	2	6.7%			
	premature rupture of membranes(PROM)	0	.0%	3	10.0%			
	preterm PROM	3	10.0%	0	.0%			
	bicornate uterus	1	3.3%	0	.0%			
	incompetent cervix	2	6.7%	0	.0%			
	no problem	0	.0%	25	83.3%			

This table shows statistically significant higher percentages of some events like spontaneous preterm birth, multiple pregnancy and incompetent cervix in preterm group than full term group.

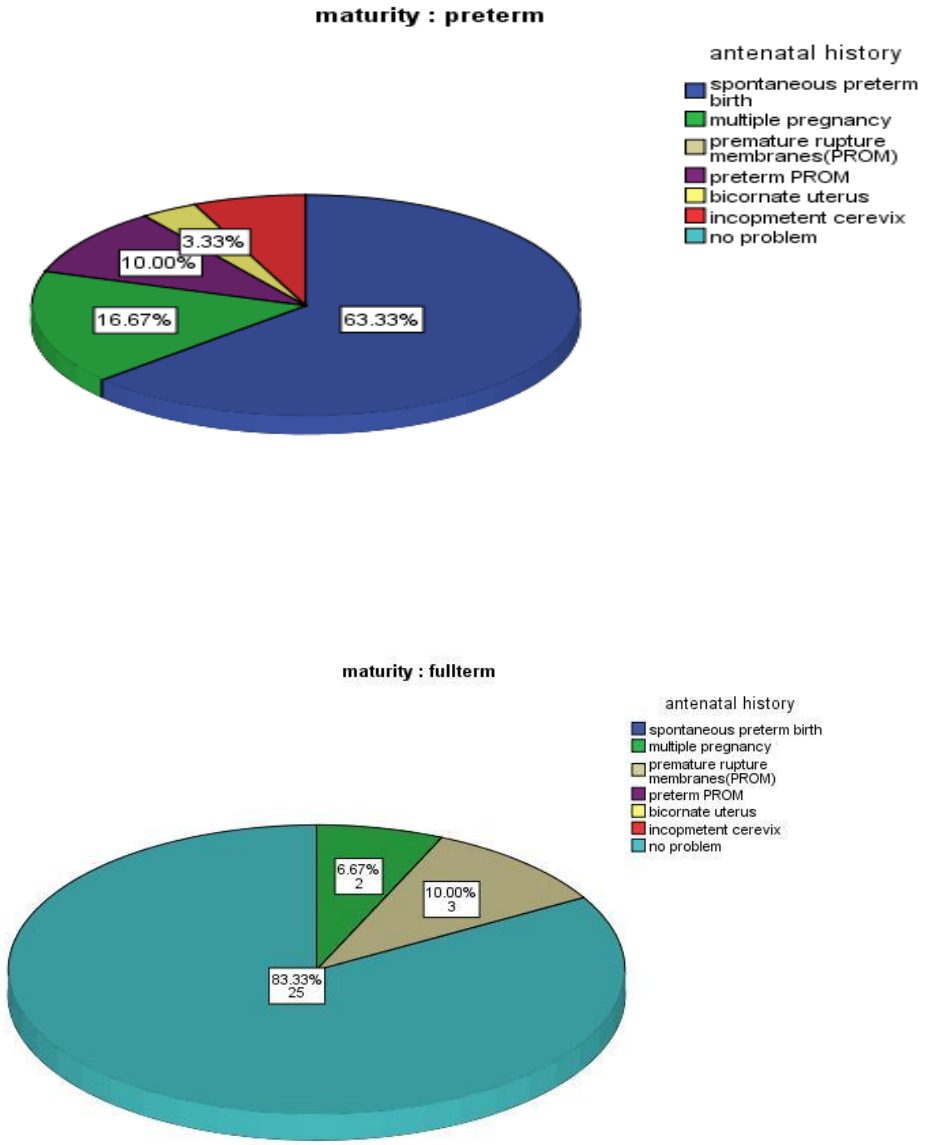


Figure (9): present antenatal history in preterm and full term groups

table (14): Comparison between fullterm and preterm groups regarding apgar scores at 1 and 5 minutes:

	maturity				***T-test***	***P value***	***Sig.***
	preterm		***fullterm***				
	Mean	***Standard Deviation***	***Mean***	***Standard Deviation***			
Apgar score at 1 min	8	1	8	1	1.48	0.145	**N.S.**
Apgar score at 5 min	9	1	10	1	-1.126	.260	**N.S.**

This table shows no statistical significant difference between full term and preterm group as regard apgar scores at 1 and 5 minutes.

Table (15): Comparison between full term and preterm groups regarding anthropometric measurements:

	Maturity				***T-test***	***P value***	***Sig.***
	Preterm		***Full term***				
	Mean	***Standard Deviation***	***Mean***	***Standard Deviation***			
Weight at birth (Kgs)	2.02	.20	3.13	.33	15.799	<.001	H.S.
Length at birth (Cms)	43.1	1.5	49.2	1.5	15.678	<.001	H.S.
Head circumference at birth (Cms)	31.2	1.2	35.0	.8	14.950	<.001	H.S.
Weight at one month (Kgs)	2.6	.2	3.9	.3	17.210	<.001	H.S.
Length at one month (Cms)	46.3	1.6	52.3	1.5	15.062	<.001	H.S.
Head circumference at one month (Cms)	33.4	1.2	36.9	.8	13.400	<.001	H.S.
Weight two months (Kgs)	3.40	.22	4.69	.31	18.680	<.001	H.S.
Length at two months (Cms)	49.80	1.82	55.55	1.48	13.423	<.001	H.S.
Head circumference at two months (Cms)	35.2	1.2	38.8	.8	13.126	<.001	H.S.
Weight at three months (Kgs)	4.22	.24	5.49	.31	17.626	<.001	H.S.
Length at three months (Cms)	53.46	1.76	58.63	1.44	12.466	<.001	H.S.
Head circumference at three months (Cms)	37.36	1.22	40.79	.87	12.582	<.001	

This table shows highly significant higher anthropometric measurement (weight, length and head circumference) at birth and after first, second and third month in full term group than preterm group.

Table(16): measure of EGF levels in different types of milk:

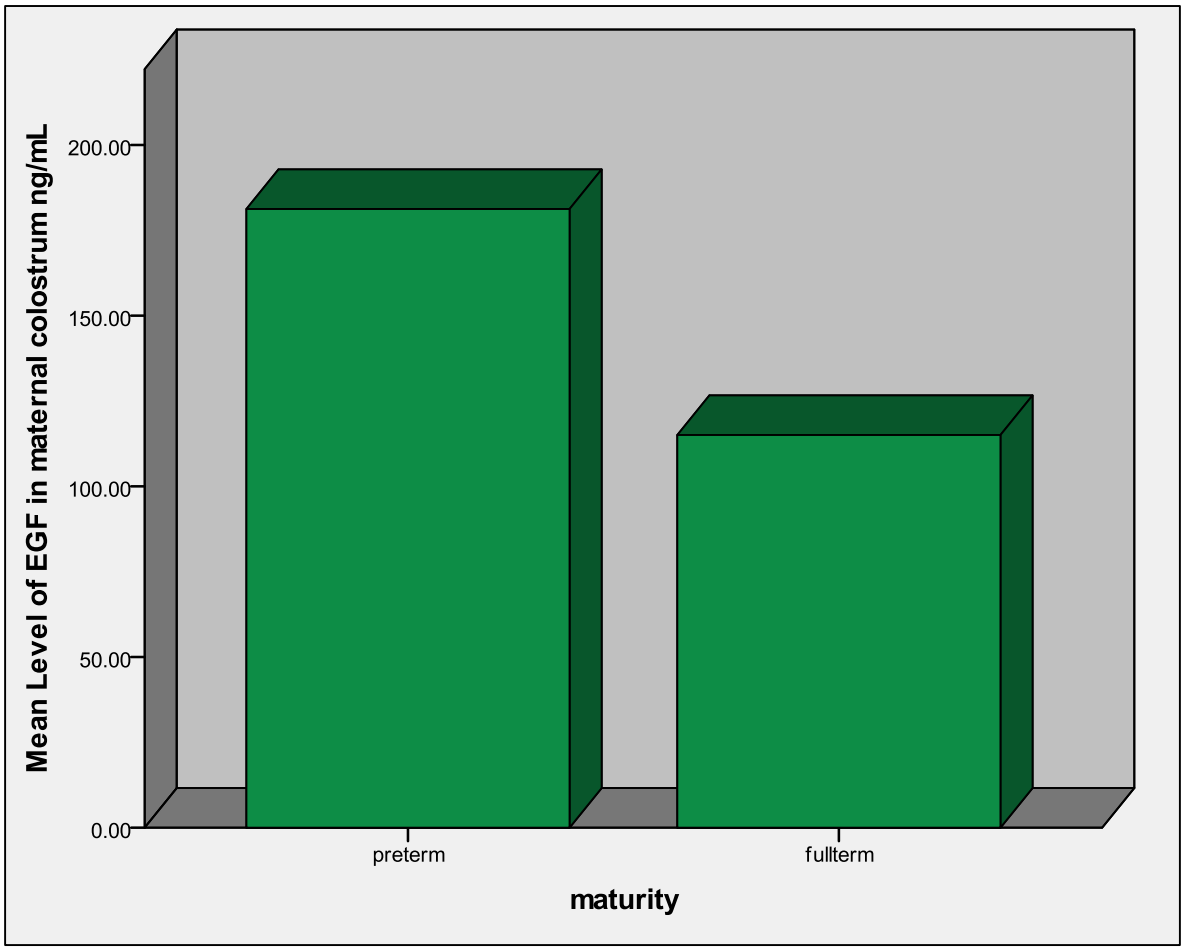
	Preterm breast milk				***Fullterm breast milk***				***Artificial milk***
	Maximum	***Minimum***	***Mean***	***Standard Deviation***	***Maximum***	***Minimum***	***Mean***	***Standard Deviation***	***Mean***
Level of EGF ng/mL	245.80	106.59	181.25	34.51	143.75	65.46	115.04	19.91	undetectable

This table shows increase mean of EGF in preterm group more than full term group and EGF is undetectable in artificial formulas.

Table(17): Comparison between Levels of EGF in maternal colostrums regarding maturity:

	Maturity				***T-test***	***P value***	***Sig.***
	Preterm		***Fullterm***				
	Mean	***Standard Deviation***	***Mean***	***Standard Deviation***			
Level of EGF in maternal colostrum ng/mL	181.25	34.51	115.04	19.91	-9.101	<.001	H.S.

This table shows highly significant higher Level of EGF in maternal colostrums of preterm group than full term groups.



Figure(10): shows highly significant difference between mean levels of EGF in maternal colostrum in preterm and full term groups.

Table (18): Comparison between Levels of EGF in maternal colostrums regarding newborn gender:

	Sex				***T-test***	***P value***	***Sig.***
	Female		***Male***				
	Mean	***Standard Deviation***	***Mean***	***Standard Deviation***			
Level of EGF in maternal colostrum ng/mL	152.45	44.52	143.84	42.83	-.763	.448	N.S.

This table shows no statistical significant difference between levels of EGF as regard infant gender.

Table (19): Comparison between Levels of EGF in maternal colostrums regarding mode of delivery:

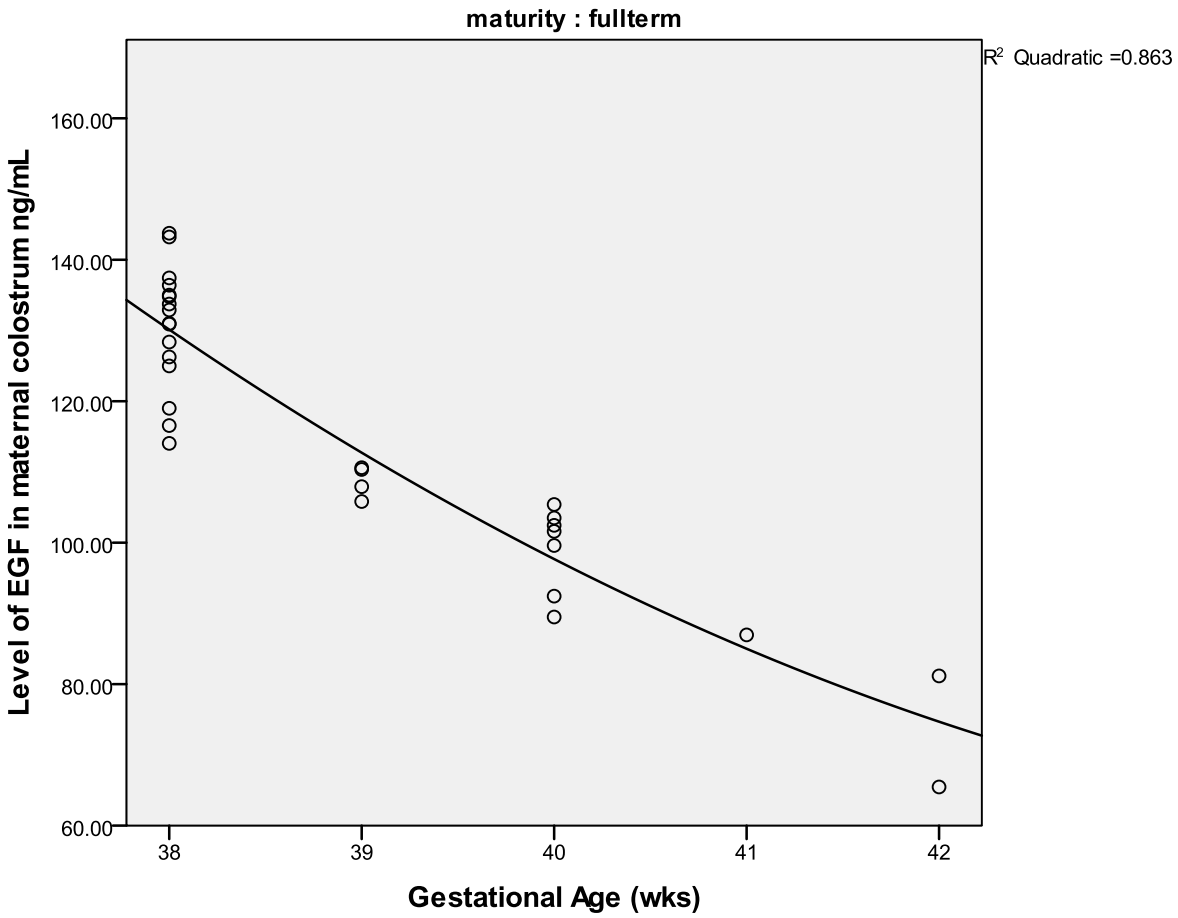
	Mode of delivery				***T-test***	***P value***	***Sig.***
	Normal vaginal		***Cesarean***				
	Mean	***Standard Deviation***	***Mean***	***Standard Deviation***			
Level of EGF in maternal colostrum ng/mL	145.95	42.11	150.49	45.62	-.763	.448	N.S.

This table shows no statistical significant difference between levels of EGF as regard mode of delivery.

Table (20) Correlation between Level of EGF in maternal colostrums and all other quantitative variables in full term group:

Full term Correlations		
	Level of EGF in maternal colostrum ng/mL	
	Pearson Correlation	Sig. (2-tailed)
Mother Age (yrs)	-.105-	.579
Mother weight (Kgs)	.233	.215
Apgar score at1 min	-.093-	.627
Apgar score at5 min	.085	.656
Weight at birth (Kgs)	-.317-	.087
Length at birth (Cms)	-.138-	.467
Head circumference at birth (Cms)	-.269-	.150
Gestational Age (wks)	**-.925-****	**<.001**
Weight at one month (Kgs)	-.324-	.080
Length at one month (Cms)	-.147-	.438
Head circumference at one month (Cms)	-.237-	.207
Weight at two months (Kgs)	-.289-	.121
Length at two months (Cms)	-.109-	.565
Head circumference at two months (Cms)	-.267-	.154
Weight at three months (Kgs)	-.325-	.079
Length at three months (Cms)	-.162-	.393
Head circumference at three months (Cms)	-.341-	.065
****. Correlation is highly significant at the 0.01 level (2-tailed).**		

This table shows EGF content in maternal colostrum negatively correlated with gestational age of neonates in fullterm group with no correlation with other variable.



Figure(11): Scatter diagram showing level of EGF in maternal colostrum and Gestational age (Wks) of full term group .

There was a negative correlation between level of EGF in maternal colostrum and gestational age (wks) , .

Table(21): Correlation between Level of EGF in maternal colostrums and all other quantitative variables in preterm group:

Preterm Correlations[a]		
	Level of EGF in maternal colostrum ng/mL	
	Pearson Correlation	Sig. (2-tailed)
Mother Age (yrs)	-.125-	.511
Mother weight (Kgs)	-.344-	.063
Order of Birth	-.135-	.476
Apgar score at1 min	-.016-	.935
Apgar score at 5 min	.010	.959
Gestational Age (wks)	**-.857-****	**<.001**
Weight at birth (Kgs)	-.317-	.087
Length at birth (Cms)	-.293-	.116
Head circumference at birth (Cms)	-.330-	.075
Weight at one month (Kgs)	-.324-	.080
Length at one month (Cms)	-.342-	.065
Head circumference at one month (Cms)	-.182-	.335
Weight at two months (Kgs)	-.336-	.070
Length at two months (Cms)	-.361-	.051
Head circumference at two months (Cms)	-.218-	.248
Weight at three months (Kgs)	-.345-	.062
Length at three months (Cms)	-.347-	.060
Head circumference at three months (Cms)	-.111-	.559

****. Correlation is highly significant at the 0.01 level (2-tailed).**

This table shows that EGF content in maternal colostrum negatively correlated with gestational age of neonates in preterm group with no correlation with other variables.

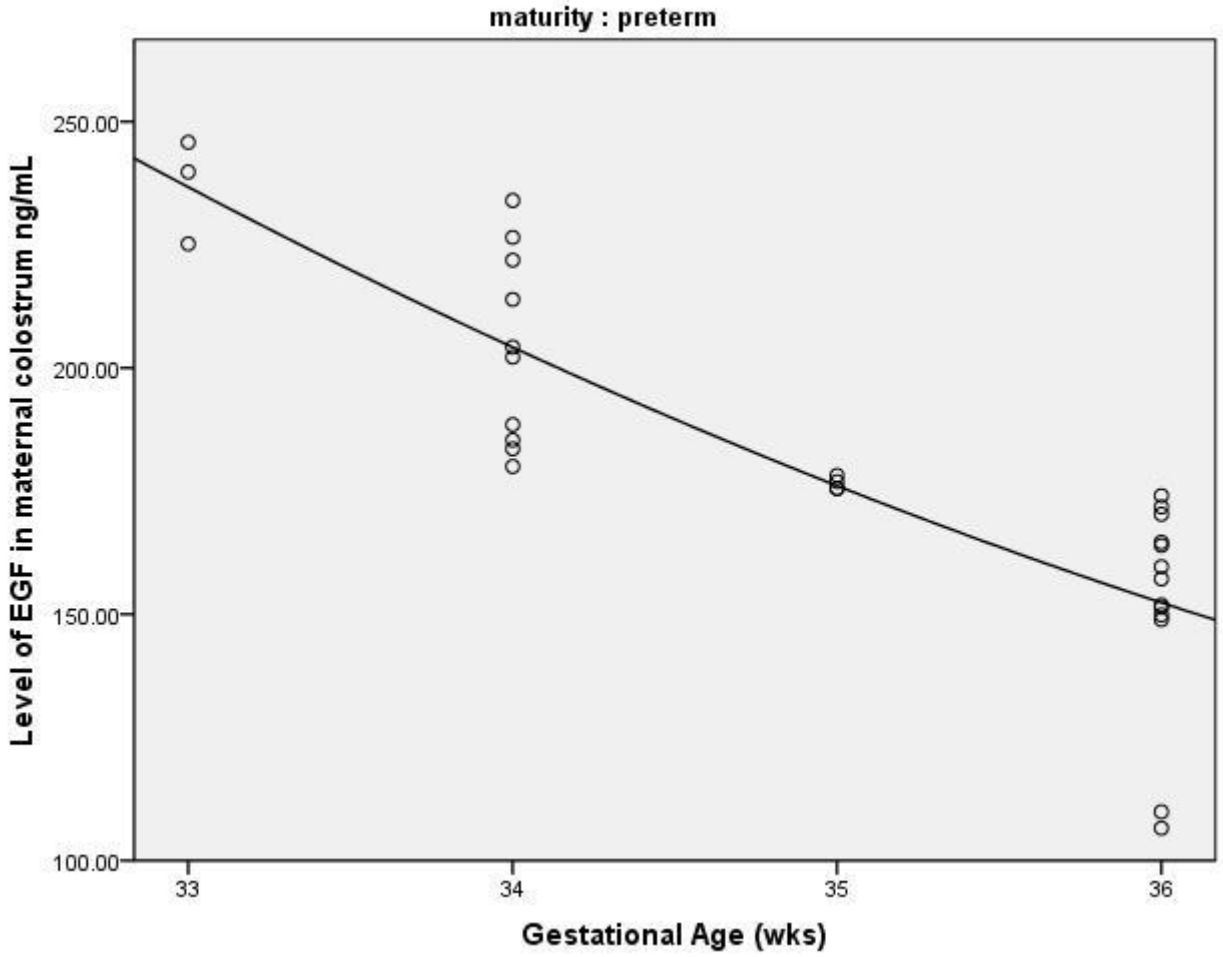


Figure (12): Scatter diagram showing level of EGF in maternal colostrum and Gestational age (Wks) of neonates.

There was a negative correlation between level of EGF in maternal colostrum and gestational age in preterm group

Table(22): comparison between different type feeding in preterm feeding group in as regard anthropometric measure increment percentage in three months:

	Feeding						*Test value*	*P value*	*Sig.*
	preterm exclusive breast feeding		*preterm mixed feeding*		*preterm exclusive formula feeding*				
	Mean	*Standard Deviation*	*Mean*	*Standard Deviation*	*Mean*	*Standard Deviation*			
weight increment percentage in 3 months	103.60	8.89	107.96	13.81	117.23	16.14	2.743	.082	N.S
length increment percentage in 3 months	23.91	2.01	24.45	5.97	23.99	3.01	.051	.950	N.S
head circumference increment percentage in 3 months	18.73	1.09	20.49	4.14	19.65	2.96	.858	.435	N.S

This table shows no statistical significant difference between preterm feeding (exclusive breast feeding, mixed feeding or exclusive formula feeding)as regarded weight, length and head circumference increment percentage in the first three months of age.

Table(23): comparison between different type feeding in full term group as regard anthropometric measure increment percentage in three months :

	Feeding						*Test value*	*P value*	*Sig.*
	full term exclusive breast feeding		*full term mixed feeding*		*full term exclusive formula feeding*				
	Mean	*Standard Deviation*	*Mean*	*Standard Deviation*	*Mean*	*Standard Deviation*			
weight increment percentage in 3 months	76.75	8.11	78.90	9.33	72.74	11.14	1.060	.360	N.S
length increment percentage in 3 months	19.45	1.22	19.32	1.71	18.99	.81	.337	.717	N.S
head circumference increment percentage in 3 months	15.93	.96	16.51	1.62	16.76	1.63	.870	.431	N.S

This table shows no statistical significant difference between full term feeding (exclusive breast feeding, mixed feeding or exclusive formula feeding)as regarded weight, length and head circumference increment percentage in the first three months of age .