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Research Article

EFFECT OF POSTNATAL LACTATIONAL COUNSELLING ON PATTERN OF NEONATAL WEIGHT

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ABSTRACT

A case control study was conducted including 160 (80 each in case and control) mothers who deliver a full term healthy, singleton with birth weight >2.5 kg. Cases include mothers admitted at our hospital who were counselled about breastfeeding by the trained person under the national trainer in structured format. Control group was taken from Ittamadu PHC, where the mother receive information to maintain breastfeeding from the maternity staff who were not trained. Baby's weight was recorded on day 1,3,14, 28 and at 6th week.

Results: Breast feeding was started as early as possible, preferably within 1 hour of delivery in all females of case group as compared to only 12.5% among controls. All females among case group gave exclusive breast milk as compared to 26.3% females among controls. Pre-lacteal feeds were given in 27.5% of babies among control group as compared to none among cases. By the end of 2 weeks, a relative increase in the weight gain was observed among infants of case group as compared to controls which became significant at 4 weeks and continued till last follow up week 6

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INTRODUCTION

Breast Feeding is the fundamental right of the child. The initiation of breast feeding and the timely introduction of adequate, safe and appropriate complementary feeds in conjunction with continued breast feeding are of prime importance for the growth, development, health and nutrition of infants and children everywhere [1]. It has been found to protect against delay in a child's language and motor skill development [2].

The low prevalence and duration of exclusive and partial breastfeeding increase the risk of infant and childhood morbidity and mortality in both developed and developing countries [3].

According to the recently developed child growth standards of World Health Organization (WHO) standards, 39% of the children below six months of age in India are underweight [4]. Globally over one million newborn infants could be saved each year by initiating breastfeeding within the first hour of life [5]. Thus, there is a need for promotion and protection of optimal infant feeding practices for improving nutritional status of children.[6]

However, there is paucity of literature documenting the effect of postnatal maternal lactation counseling on the weight gain amongst term infants. The present study was thus planned to assess whether lactation counseling of the mother has any positive impact on the neonatal weight gain.

MATERIALS AND METHODS

It is a Hospital Based Observational (CaseControl) Study was conducted on children admitted in the department of pediatric of Rajarajeshwari medical college & hospital and control group was taken from Ittamadu PHC, from January 1st 2016 to Jan 31st 2017

Sample size being 160 (80 each in case and control). Noella *et al.* [14] study has observed that the weight gain after 28 days with skilled postnatal lactation counselling was 9.2 ± 4.5 g/kg/day and without counselling it was 7.9 ± 5.1 g/kg/day. In the present study, expecting to get similar results and to get 80% Power, 95% CI, with minimum detectable difference between two groups as 2g/kg/day.

Inclusion criteria

The study population consists of mothers who deliver a full term (≥ 37 to ≤ 42 weeks) vaginal/ LSCS, healthy, singleton,

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appropriate for gestational age (AGA) neonates, with a birth weight of >2.5 kg.

Exclusion criteria

Mother–infant pairs are excluded if the mother or infant is admitted to an intensive care unit, or, if the infant is born with congenital or chromosomal malformations.

METHODOLOGY

- From 1st January 2016 to January 31st 2017, mothers admitted at RRMCH were counseled about breastfeeding by the trained person under the national trainer with the help of charts, literature and verbal advice in structured format.
- They were educated about breast feeding benefits, advantages of establishing breastfeeding at the earliest during antenatal check-up, supervised and helped during the first feed about technique of breast feeding, breast feeding benefits and its importance, skilled lactation counseling was subsequently given until discharge and during follow up days.
- Control group was taken from Ittamadu PHC, where the mother of infants receive information to maintain breastfeeding from the maternity staff who were not trained.
- Baby’s weight was recorded on day 1,3,14, 28 and then at 6th week with the help of Salter digital weighing scale upto 1 point of decimal in both study groups to minimize error.

RESULTS

Observations

Table 1 Comparison of groups based on Mean Age

Variables	Group	N	Mean	SD	p- value
Age (yrs)	Cases	80	24.58	3.16	0.072
	Controls	80	23.60	3.63	

Mean age of the case and control group was 24.58 and 23.6 years respectively with no significant difference between them (p=0.072).

Table 2 Comparison of groups based on Education status

Education	Group		Total
	Cases	Controls	
Below SSC	32	37	69
	40.0%	46.3%	43.1%
SSC	17	25	42
	21.3%	31.3%	26.3%
HSC	22	13	35
	27.5%	16.3%	21.9%
Graduate	10	5	15
	12.5%	6.3%	9.4%
Total	80	80	160
	100.0%	100.0%	100.0%

p- value 0.12

Majority of the females in both case and control group were educated below SSC level (40% and 46.3%). Only 12.5% and 6.3% females have completed their graduation.

Table 3 Comparison of groups based on Socio-economic status

SES	Group		Total
	Cases	Controls	
Lower	0	39	39
	0.0%	48.8%	24.4%
Lower/ Upper	71	41	112
	88.8%	51.3%	70.0%
Middle	9	0	9
	11.3%	0.0%	5.6%
Upper	80	80	160
Total	100.0%	100.0%	100.0%

p- value <0.01

As per modified kuppuswamy classification, majority of the females in among cases were in middle class (88.8%) while approx. half of the females (48.8%) in control group were from lower class.

Table 4 Mean comparison of groups based on gestation age

Variables	Group	N	Mean	SD	p- value
GA (weeks)	Cases	80	38.55	0.93	0.87
	Controls	80	38.57	0.97	

Mean gestation age of the case and control group was 38.55 and 38.57 weeks respectively with no significant difference between them (p=0.87).

Table 5 Mean comparison of weight of the baby during follow up between study groups

Weight of the baby (gm)	Group	N	Mean	SD	P- value
Day 1	Cases	80	2976.63	364.83	0.89
	Controls	80	2969.25	369.48	
Day 3	Cases	80	2919.88	347.16	0.64
	Controls	80	2893.63	368.62	
Week 2	Cases	80	3028.63	386.38	0.38
	Controls	80	2972.63	419.32	
Week 4	Cases	80	3529.25	351.06	<0.01
	Controls	80	3366.38	425.57	
Week 6	Cases	80	3963.63	367.44	<0.01
	Controls	80	3705.10	446.38	

On evaluating the pattern of weight gain among study groups it was observed that both the groups were comparable at baseline i.e. no difference was observed between birth weights (2.976 vs 2.969 Kg; p=0.89). However a by the end of 2 weeks, a relative increase in the weight gain was observed among infants of case group as compared to controls which became significant at 4 weeks (3.53 vs 3.37 kg; p<0.01). This advantage continued till last follow up i.e. week 6 (3.96 vs 3.70 Kg; p<0.01).

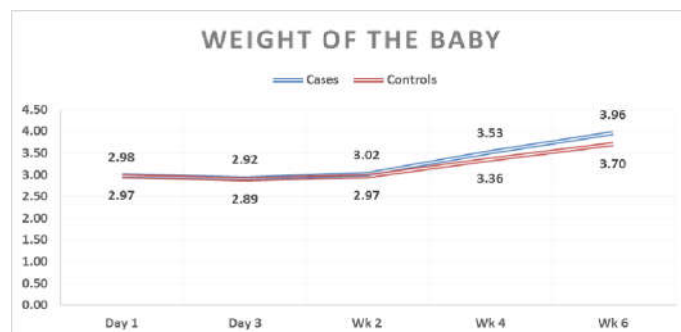


Figure 1 Mean comparison of weight of the baby during follow up between study groups

DISCUSSION

Breastfeeding promotion is an important component of child survival strategies, and WHO recommends that infants should

be exclusively breastfed for 4–6 months [7]. The promotion and support of breastfeeding is a global priority. Experts agree that exclusive breastfeeding (i.e. breast milk as the sole source of food) is the ideal method of feeding infants up to about 6 months of age, after which breastfeeding should be continued but complemented with other sources of nutrition [8]. Infant weight measurement is one of the tools most frequently used to assess breastfeeding adequacy. Neonates receive only small amounts of fluids in the first days following birth [9], and they tend to lose weight before they begin to gain weight [10]. Excessive weight loss or inadequate weight gain can be indications of insufficient milk transfer. Adequate nutrition during infancy and early childhood is essential to ensure the growth, health, and development of children to their full potential. Poor nutrition increases the risk of illness, and is responsible, directly or indirectly, for one third of the estimated deaths in children less than 5 years of age [11]. Practice of exclusive breastfeeding is low in most parts of our country. Programmes that increase breastfeeding do not necessarily improve the rate of exclusive breastfeeding [12–13]. Although hospital-based programmes have shown significant impact on breastfeeding initiation, its effect on maintenance of breast feeding and appropriate weight gain in infants was not studied extensively. In present study we thus aimed to evaluate the impact of skilled postnatal lactation counseling in mothers on breast feeding practices and thereby on gain in weight in term neonates in comparison to a control group (lactation counselling by untrained staff).

Weight of the Baby

On evaluating the pattern of weight gain among study groups it was observed that both the groups were comparable at baseline i.e. no difference was observed between birth weights (2.976 vs 2.969 Kg; $p > 0.89$). However a by the end of 2 weeks, a relative increase in the weight gain was observed among infants of case group as compared to controls which became significant at 4 weeks (3.53 vs 3.37 kg; $p < 0.01$). This advantage continued till last follow up i.e. week 6 (3.96 vs 3.70 Kg; $p < 0.01$).

There are several studies documenting the benefit of lactational counselling to secure effective long term lactation. However, there is paucity of literature documenting the effect of postnatal maternal lactation counselling on the weight gain in term infants.

Pereira NM *et al.* [14] in one such study, compared the impact of postnatal lactational counseling on the weight gain in full term neonates. The mean (SD) weight gain was observed to be significantly higher in the counselled group in comparison to control group [9.2 (4.5) g/kg/d vs. 7.9 (5.1) g/kg/d; $p < 0.05$]. Haider *et al.* [15], in their study assessed the effect of peer counselling support programme in this regard. A total of 994 infants were born during the study period; 94 % were normal birth weight and 6 % were LBW (<2.5 Kg). There was no growth faltering in these infants during 6 months. Underweight rates in normal birth weight infants remained similar (2.2 % at 1 month and 2.5 % at 6 months), whereas underweight rates in LBW infants decreased from 42.1 % at 1 month to 21.1 % at 6 months. Thakur SK *et al.* [16] evaluated the impact of nutrition education on growth of LBW babies compared to control group. Mean initial body weight was similar in both groups (2261±198 g vs 2241±244 g, $p = 0.535$) while body weight after

2 months increased significantly in intervention group (3620±229 g vs 3315±301 g, $p < 0.001$).

To summarize, we observed that weight gain in babies can be significantly improved by skilled postnatal lactation counselling. Therefore, we thus recommend incorporation of lactation counselling by skilled personnel as a part of routine post-natal care offered to mothers in our setup and also in other hospitals both rural and urban.

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