

# Identify the feeding difficulties and weight gain problems in infants with Cleft Lip and/or Palate up to 6 months old while attending to the Multidisciplinary Cleft Clinic, Western province in Sri Lanka.

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## **Abstract- Introduction:**

Cleft lip and palate (CLP) is the most common craniofacial deformity, occurring in 6 - 12 weeks of gestation. The severity of feeding difficulties is varying with the severity of the cleft deformity. Babies use both compression and suction to extract milk, but both will affect CLP due to structural deformities. Babies with CLP can be breastfed or bottle fed with a special bottle if there are not associated with syndromes, breathing or neurological condition. The purpose of the study was to identify the babies with CLP can consume an adequate amount of milk via BF? What are the issues affecting their weight gain?" and why it is?

## **Methodology:**

The study was conducted at the Multidisciplinary cleft clinic (MDCC) at Lady Ridgeway Hospital, Sri Lanka from May to July 2021 with 70 infants. Infants were randomly selected once they were attending to the MDCC. Data collection conducted mainly from medical records, Child Health Development Record (CHDR) book, Speech and Language Therapists (SLT) notes and swallowing assessment results, mother's information and questionnaire. Babies with CLP - associated syndrome conditions, congenital heart diseases or any other neurological conditions or developmental disorders, and premature babies were excluded.

## **Results:**

There were 4 infants with Isolated Cleft Lip (ICL), 26 infants with Unilateral CLP (U/LCLP), 8 infants with bilateral CLP (B/LCLP) and 32 infants with isolated Cleft palate (ICP). Distribution of their birth weight, 45.71% were more than 3.0kg, between 2kg-3kg – 52.85% and 1.4% - below 1.5 kg. Introduction of BF in day one, 100% in ICL, 30.76% in U/L CLP, 37.5% in B/L CLP and 90.63% in ICP. Rest were fed with alternative methods +/-BF. Weight loss: >10% in 31.42%, less than <10% in 47.14% and no significant loss in 21.42% within the first week. CP diagnosed, on day 1 in 37.5%, day 2-12.5%, after day 2-18.75%, within 1 week-21.87%, after one week-3.12% and after 3 months-6.25%. All of them were presented normal sucking swallowing breathing synchrony without any risk of aspiration. All the infants with ICL (100%) were able to continue BF. Infants with U/L CLP-88.46%, B/L CLP-12.5% and ICP- 84.37% were needed support of special bottle which modified for clefts.

## **Conclusion:**

Introduce BF in infants with ICP, CL and/ or P from day one if there are no any swallowing, breathing difficulties, neurological issues or associated syndromes under supervision to prevent dehydration because they may not get adequate of milk intake only via BF. Most infants with CP / CLP cannot extract milk from breast to continue only breast feeding and most of them need an alternative method for feeding. Early diagnosis of ICP is important for further investigations, to

prevent failure to thrive, weight loss or nutritional issues. Increase the awareness of feeding methods and swallowing issues and importance of SLT's swallowing assessments among health care professionals

**Index Terms-** Cleft lip and palate, feeding difficulties, aspiration, sucking reflex, compression

## I. INTRODUCTION

Cleft lip and palate (CLP) is the most common craniofacial deformity, occurring in 6 - 12 weeks of gestation. Incidence is about 1 in 500- 750 live births results in a child with cleft globally (Hardin- Jones, Karnell, & Peterson Falzone, 2001). The severity of feeding difficulties is varying with the severity of cleft lip and palate deformity therefore very lower rates of continuing breast feeding among the cleft population (Miller, 2011). According to the statistics it has estimated that 50% of infants have cleft lip and palate (CL/P), 30% have isolated Cleft palate (ICP), 20% have isolated cleft lip (ICL), and about 10% are bilateral clefts (B/L) out of all infants with CLP, (Wolf L S et al, 1992). According to the collected statistics at Multidisciplinary Cleft Clinic, at Lady Ridgeway Hospital (LRH) for Children in Sri Lanka, in 2009; it has estimated that 35% of infants have CLP; among them, 25% of babies present with unilateral CLP, 10% have B/L CLP, 40% of them have ICP and 25% infants have ICL and these numbers are closer to the international findings (Gunasekera A R, 2009). Babies use both compression and suction to extract milk in successful breastfeeding. In babies with CLP both actions will be affected due to their structural deformities, (Reilly et al., 2013). The suction will be affected by inability of developing an adequate negative intraoral pressure to extract milk from mother's breast. Compression will be affected by inability in pressing the breast between the tongue and jaw. According to the studies they have found, there is a relationship between intraoral pressure the infants could develop while feeding and the size and the type of cleft deformity and the maturity of the baby (Reilly S, et al., 2006). Babies with CLP with syndromes diagnosis, breathing or neurological difficulties may develop swallowing difficulties due to they are inability in maintaining adequate sucking swallowing breathing synchrony. According to the World Health Organization (WHO) and United Nations International Children's Emergency Fund (UNICEF), it is compulsory to promote exclusive breastfeeding for infants until 6 months old, (Harishikesh S, et al., 2020). There is a close link between feeding issues and which leads to developing poor growth and development, fatigue during breastfeeding, and feeding time may be prolonged (Reilly et al., 2013). Delayed detection of ICP also has a link to developing feeding issues which leads to developing poor growth and development failure to thrive (Vanessa Martin, et al., 2014). Infants with CL and/or P cannot depend on breastfeeding only, due to their severity of the cleft deformity. Therefore it is essential to introduce an alternative method for feeding to provide them an adequate amount of milk. There are few bottles which designed especially for the infants with CL and/or P. Followings are few examples for specially developed squeezable bottles in other countries; example: Mead Johnson bottle, Soft plas bottle (with NUK orthodontic teat), Haberman feeder (with Squeezable teat), Rosti bottle (and scoop) (Vanessa Martin et al., 2014). But it is a difficult effort as these bottles are expensive and not available in Sri Lanka. Currently, use an adopted squeezable bottle which was originally made for the introduction of supplementary food fixed with an Orthodontic silicon teat instead of the spoon. The purpose of the study was to identify the babies with CLP can consume an adequate amount of milk via breastfeeding only? What are the issues affecting their weight gain?" and why it is?

## II. METHODOLOGY:

Babies born with CLP were included in this study. The study was conducted at Multidisciplinary Cleft Clinic (MDCC) at Lady Ridgeway Hospital in Sri Lanka from May to July 2021. Seventy mothers of six months old infants with CL and/or P were invited with their consent. Ethical approval was granted by the hospital ethics committee. Infants with CLP- associated syndrome conditions, congenital heart diseases or any other neurological conditions or developmental disorders, and premature babies were excluded.

All the infants were assessed by Speech and Language Therapist for their swallowing abilities. Data were collected from their medical records, Child Health Development Record (CHDR) book, Speech and Language Therapists (SLT) notes and their swallowing assessment results, the mother's information and a questionnaire. The same speech and language therapist used the questionnaire with mothers and recorded and collected their answers with consent.

## III. RESULTS:

There were 4 infants with isolated cleft lip (ICL), 26 infants with Unilateral CLP (U/LCLP), 8 infants with bilateral CLP (B/LCLP) and 32 infants with isolated Cleft palate (ICP) in the study group. Majority were the infants with ICP. Both cleft lip and palate affected in 34 out of 70 infants.

**Table 1. Distribution of study group according to their cleft type.**

Cleft Type	ICL	U/L CLP	B/L CLP	ICP
Numbers	4	26	8	32

Considering their overall birth weight, 32 out of 70 ( 45.71%) infants were presented with more than 3.0 kg. Thirty seven infants out of 70 (52.85%) were weighed 2kg-3kg and one out of 70 infant was (1.4%) below 1.5 kg. Following is the description of birth weight according to their cleft type.

**Table 2. Distribution of birth weight and their cleft type.**

Birth weight -kg	ICL (4)	U/L CLP (26)	B/L CLP (8)	ICP (32)
<3.5	1(25%)	5(19.23%)	-	6 (18.75%)
<3.0	1(25%)	9(34.61%)	3(37.5%)	7 (21.87%)
<2.5	2(50%)	8(30.76%)	4 (50%)	12(37.5%)
<2.0	0	4(15.38%)	1(12.5%)	6 (17.5%)
<1.5	0	0	0	1(3.125%)

In ICL group all the infants 4 out of 4 (100%) were breast fed, U/L CLP 8 out of 26 (30.76%) infants were breast fed, B/L CLP group 3 out of 8 (37.5%) infants, and in ICP group 29 out of 32 (90.63%) introduced BF on day 1. According to the results most of the infants with ICP were breast fed on the day 1 than the other infants with CL and /or P. , In following groups medical professionals have not introduced breastfeeding in infants with U/L CLP in 18 out of 26 infants and B/L CLP in 5 out of 8 ( 69.23% ) and (62.5%) infants respectively. According to the results all the infants with ICL were breastfed. Rest were fed with alternative methods -/ + BF such as via spoon, cup, syringe, gavage feeding and special bottle feeding. In 9 out of 26 (34.61% ) infants in U/L CLP and I out of 8 (12.5%) infants with B/L CLP were completely on gavage feeding even though they have presented adequate sucking swallowing breathing synchrony to continue oral feeds according to Speech and language therapist’s swallowing assessments. The infants on breastfeeding + gavage feeding showed following results; such as in U/L CLP- 4 out of 26 (15.38%) infants and two out of 8 infants with B/L CLP ( 25%) even though they did not present with any swallowing difficulties.

**Table 3. Introduction of breastfeeding and their ages in different cleft types**

Introduction of breast feeding	ICL (4)	U/L CLP (26)	B/L CLP (8)	ICP (32)
<b>Breast feeding Day 1</b>				
Day1 -Yes	4(100%)	8(30.76%)	3(37.5%)	29(90.63%)
Day 1- No	0	18(69.23%)	5(62.5%)	3(9.3%)
<b>Breast feeding Day 2</b>				
BF only	4(100%)	0	2(25%)	19(59.37%)
BF+spoon	0	0	0	2(6.25%)
BF+EBM cup	0	6(23.08%)	2(25%)	2(6.25%)
NG	0	0	0	3(9.37%)
EBM cup	0	3(11.54%)	0	2(6.25%)
Syringe only	0	2(7.7%)	0	0
Gavage feeding	0	9(34.61%)	1(12.5%)	0
BF+Gavage feeding	0	4(15.38%)	2(25%)	2(6.25%)
EBM+Bottle	0	2(7.69%)	1(12.5%)	2(6.25%)

According to the results, there was no weight loss in infants with ICL group. In U/L CLP, B/L CLP and ICP presented less than 10% of weight loss as in 12 out of 26 (46.15%) infants, 2 out of 8 (25%) infants and 8 out of 32 (25%) infants respectively and more than 10% of weight loss as 8 out of 26 (30.76%) infants, 5 out of 8(62.5%), and 20 out of 32 (62.5%) infants respectively.

They presented weight loss > 10% in 22 out of 70 (31.42%) infants, <10% in 33 out of 70 (47.14%) infants and no significant loss in 15 out of 70 (21.42%) infants, within first week.

**Table 4. Description of weight loss in the infants and their cleft type**

within 1st week weight loss	ICL (4)	U/L CLP (26)	B/L CLP (8)	ICP (32)
>10%	0	12(46.15%)	2(25%)	8(25%)
<10%but significant	0	8(30.76%)	5(62.5%)	20(62.5%)
Not significant	4(100%)	6(23.07%)	1(12.5%)	4(12.5%)

The special bottle has given to 4 out of 70 (5.71%) infants in the hospital setting which baby was born. According to data the special bottle has introduced in U/L CLP -1 out of 26 (3.85%) infants, B/L CLP- 1 out of 8 (12.5%) infants, and in ICP group 2 out of 32 (6.25%) infants. Most of them were not introduced feeding with special bottle but they have introduced glass bottle or special bottle with spoon.

**Table 5. Methods of feeding used in hospital settings**

Introduced special bottle feeding in the hospital	ICL (4)	U/L CLP (26)	B/L CLP (8)	ICP (32)
Yes	0	1(3.85%)	1(12.5%)	2(6.25%)
No	3(75%)	19(73.08%)	7(87.5%)	26(81.25%)
<b>Other methods</b>				
Glass bottle	1(25%)	4(15.38%)	0	1(3.12%)
Special bottle spoon feed	0	2(7.69%)	0	3(9.37%)

ICL, U/L CLP and B/L CLP were diagnosed on day 1 as their deformity is visible. But in the ICP group, the cleft palate has diagnosed on day 1 in 12 infants out of 32 (37.5%). Most of them were diagnosed as follows; on day 2 (4/32- 12.5%), after day 2 (6/32- 18.75%), 1 week (7/32 – 21.87%), after 1 week (1/32- 3.12%) and after 3 months (2/32 – 6.25%). In ICP group 16 out of 32 (50%) infants were diagnosed for their ICP by relevant hospital medical staff. Others were detected by a private practitioner (5/32- 15.625%) and by a family member (11/32 -34.37%).

**Table 6. The ages of identification of CL and/or P and by whom**

Diagnosed the cleft in	ICL (4)	U/L CLP (26)	B/L CLP (8)	ICP (32)
DAY 1	4(100%)	26(100%)	8(100%)	12(37.5%)
DAY 2	0	0	0	4(12.5%)
After day 2	0	0	0	6(18.75%)
1 week	0	0	0	7(21.87%)

after 1 week	0	0	0	1(3.12%)
after 3 months	0	0	0	2(6.25%)
<b>Diagnosed by</b>	<b>ICL (4)</b>	<b>U/L CLP (26)</b>	<b>B/L CLP (8)</b>	<b>ICP (32)</b>
Medical staff in the hospital	4(100%)	26(100%)	8(100%)	16(50%)
Private practitioner	0	0	0	5(15.625%)
family member	0	0	0	11(34.37%)

In ICP group once they have identified their cleft palate after discharge from the relevant hospital, they have taken their babies to the hospital back. At that time these babies were fed in different methods such as nasogastric tube (4 out of 16 infants – 12.5%), glass normal bottle (2 out of 16 infants - 6.25%), no one was cup fed, breastfeeding + gavage feeds (1 out of 16 infants – 3.125%) and syringe feeds (1 out of 16 infants – 3.125%).

**Table 7. Feeding methods recommended by different hospitals in the ICP group**

After diagnosis the cleft feeding method	ICP	%
BF	0	-
NG	4	12.5%
Glass BOTTLE	2	6.25%
Gavage	0	-
Cup	8	25%
Bf+ gavage	1	3.125%
Syringe	1	3.125%

According to the questionnaire, 4 out of 4 of infants with ICL were able to suck efficiently from the mother’s breast. In the group of U/L CLP 1out of 26 infants (3.85%) were able to suck efficiently, 8 out of 26 (30.76%) infants were not able to suck efficiently. In 17 out of 26 (65.38%) infants were not introduced for breastfeeding. In the group of B/L CLP 0/8 (0%) no one was able to suck efficiently, 2 out of 8 (25%) infants were not able to suck efficiently and 6 out of 8 (75%) infants were not introduced for breast feeding. In ICP group 4 out of 32 (12.5%) infants were able to suck efficiently, and 28 out of 32 (87.5%) infants were not able to suck efficiently.

**Table 8. Distribution of ability in sucking reflex efficacy and cleft type**

Baby could suck efficiently	ICL (4)	U/L CLP (26)	B/L CLP (8)	ICP (32)
Yes	4(100%)	1(3.85%)	0	4(12.5%)
No	0	8(30.76%)	2(25%)	28(87.5%)
No BF introduced	0	17(65.38%)	6(75%)	0

Four out of four babies (100%) were presented with normal urine output in babies with ICL only. In U/L CLP group 21out of 26 (80.76%) infants had normal urine out and 5 out of 26 (19.23%) infants showed reduce in urine output in the early days. B/L CLP group 6 out of 8 (75%) infants had normal urine out and 2 out of 8 (25%) infants showed reduce in urine output in the early days. In ICP group 15 out of 32 (46.87%) infants had normal urine out and 17 out of 32 (53.12%) infants showed a reduction in urine output in the early days. According to results significant reduction in urine was noticed in the ICP group, which is more than fifty percent.

**Table 9. Reduction of urine output and cleft type**

Urine out put	ICL (4)	U/L CLP (26)	B/L CLP (8)	ICP (32)
Normal	4(100%)	21(80.76%)	6(75%)	15(46.87%)
Reduced	0	5(19.23%)	2(25%)	17(53.12%)

In ICL group 1 out of 4 (25%) infants, U/L CLP 4 out of 26 (19.05%) infants, in B/L CLP group 6 out of 8 (75%) infants and in ICP group 15 out of 32 (46.87%) infants were needed phototherapy treatment. According to data more babies with cleft palate is needed phototherapy.

**Table 10. Phototherapy needed and cleft type**

Needed phototherapy	ICL (4)	U/L CLP (26)	B/L CLP (8)	ICP (32)
YES	1(25%)	4(19.05%)	1(12.5%)	17(46.87%)
NO	3(75%)	22(84.61%)	7(87.5%)	15(53.12%)

According to the results infants with ICL 4 out of 4 (100%) were able to continue only breast feeding. In U/L CLP group 23 out of 26 (88.46%) needed the special bottle and 3 out of 26 (11.53%) infants were not needed and could manage with other methods. In B/L CLP group 7 out of 8 (12.5%) infants needed the special bottle and 1 out of 8 (87.5%) was not introduced for the special bottle. In ICP group 27 out of 32 (84.37%) infants were needed the special bottle and 4 out of 32 (12.5%) infants were not introduced the special bottle and 1 out of 32 (3.12%) was refused the bottle.



**Table 11. Distribution of introducing the special bottle**

Given the special bottle	ICL (4)	U/L CLP (26)	B/L CLP (8)	ICP (32)
Yes	0	23(88.46%)	7(12.5%)	27(84.37%)
No	4(100%)	3(11.53%)	1(87.5%)	4(12.5%)
Refused	0	0	0	1(3.12%)

Most of the babies were visited LRH within 1 week, ICL 2 out of 4 (50%), U/L CLP 20 out of 26 (76.92%) infants, B/L CLP 8 out of 8 (100%) infants, the ICP 11 out of 32 (34.37%) infants respectively. In ICP group there were more variations in 1<sup>st</sup> visit at LRH such as 10 out of 32 (31.25%) infants within 1-2 weeks, 4 out of 32 (12.5%) infants within 2-3 weeks, 1 out of 32 (3.12%) infant within 3-4 weeks and 6 out of 32 (18.75%) infants visited after one month.

**Table 12. Distribution of ages of the first visit in LRH and cleft type**

1 <sup>st</sup> visit at LRH	ICL (4)	U/L CLP (26)	B/L CLP (8)	ICP (32)
Within 1 week	2(50%)	20(76.92%)	8(100%)	11(34.37%)
1-2 weeks	2(50%)	3(11.53%)	0	10(31.25%)
2-3 weeks	0	2(7.69%)	0	4(12.5%)
3-4 weeks	0	0	0	1(3.12%)
After 1 month	0	1(3.8%)	0	6(18.75%)

Normally in literature, the expected weight in 14 days should be close to the baby's birth weight. According to data, in ICL group 4 out of 4 (100%), U/L CLP 19 out of 26 (73.07%) infants, B/L CLP 5 out of 8 (62.5%) infants and the ICP group 15 out of 32 (46.87%) infants were able to gain their weight close to their birth weight in 14 days. In ICP group it was less than the other groups and more than 50%, in detail 17 out of 32 infants in ICP group (53.12%) were not able to reach their birth weight in 14 days.

**Table 13. Distribution of weight gain in fourteen days and cleft type**

Reached birth weight in 14 days	ICL (4)	U/L CLP (26)	B/L CLP (8)	ICP (32)
YES	4(100%)	19(73.07%)	5(62.5%)	15(46.87%)
NO	0	7(26.92%)	3(37.5%)	17(53.12%)

Their weight loss has considered at the 1<sup>st</sup> visit at LRH. In ICL 0/4 (0%), U/L CLP 7/26 (26.92%), B/L CLP 2/8 (25%), and the ICP 18/32 (56.25%) they showed weight loss more than 10%. Most of the babies in ICP group about 18/32 (56.25%) presented with significant weight loss on their 1<sup>st</sup> visit.

**Table 14. Distribution of weight loss of than 10% in the 1<sup>st</sup> visit**

Weight loss more than 10% in the 1 <sup>st</sup> visit	ICL (4)	U/L CLP (26)	B/L CLP (8)	ICP (32)
Yes	0	7(26.92%)	2(25%)	18(56.25%)
No	4(100%)	19(73.07%)	6(75%)	14(43.75%)

The infants with ICL 4 out of 4 (100%) were on breastfeeding. In U/L CLP 1 out of 26 (3.8%) on breast feeding, 23 out of 26 (88.46%) infants were on breastfeeding+ expressed breast milk via bottle feeding. Other infants in the same group were on breastfeeding + cup feeds 2 out of 26 (7.69 %). In B/L CLP no one was on complete breastfeeding, 7 out of 8 (87.5%) infants were on breast feeding and EBM via special bottle feeds and , 1 out of 8 (12.5%) infant was on cup feeding + breastfeeding . In ICP group 2 out of 32 (6.25%) infants were on complete breastfeeding, 27 out of 32 (84.37%) on breastfeeding+ expressed breast milk via bottle feeds, 1 out of 32 (3.12%) on cup + breastfeeding and 2 out of 32 (6.25%) infants were on breastfeeding + expressed breast milk via spoon feeding.

**Table 15. Description of current feeding method in the 1<sup>st</sup> visit and cleft type.**

Current method of feeding in the 1 <sup>st</sup> visit	ICL (4)	U/LCLP (26)	B/L CLP (8)	ICP (32)
BF	4(100%)	1(3.8%)	0	2(6.25%)
No BF	0	0	0	0
BF+ EBM bottle	0	23(88.46%)	7(87.5%)	27(84.37%)
NG	0	0	0	0
Cup + BF	0	2(7.69%)	1(12.5%)	1(3.12%)
Syringe	0	0	0	0
BF +EBM+ spoon	0	0	0	2(6.25%)
Bottle	0	0	0	0

Mothers complained about their milk reduction as follows. In the ICL group milk flow did not reduce. In the U/L CLP group reduced their milk production in 20 out of 26 (76.92%) within one month, 2 out of 26 (7.69%) within 2 months, 3 out of 26 (11.54%) within 3 months, 1 out of 26 (3.84%) within 4 months. In the B/L CLP group reduced their milk production in 4 out of 8 (50%) within 1 month, 3 out of 8 (37.5%) mothers in 2 months and 1 out of 8 (12.5%) within 3 months. In the ICP group reduced milk production in 13 out of 32 (40.62%) within 1 month, 6 out of 32 (18.75%) within 2 months, 8 out of 32 (25%) mothers within 3 months and 5 out of 32 (15.62%) mothers within 4 years.

**Table 16. Distribution of reduction of milk flow**

Reduced milk amount	ICL (4)	U/L CLP (26)	B/L CLP (8)	ICP (32)
Within 1/12	0	20(76.92%)	4(50%)	13(40.62%)
2/12 yrs	0	2(7.69%)	3(37.5%)	6(18.75%)
3/12 yrs	0	3(11.54%)	1(12.5%)	8(25%)
4/12 yrs	0	1(3.84%)	0	5(15.62%)
Not reduced	4(100%)	0	0	0

**IV. DISCUSSION:**

The primary aim of the study was to ascertain, about continuation only breast feeding providing them adequate amount of milk via only breast feeding. Results showed that there is a close link between breastfeeding and a baby’s nutrition and growth development. According to the results, it showed the infants with ICL could manage only breastfeeding but other babies with ICP and CLP showed issues in weight gain problems and almost all of them needed support to top up with expressed breast milk in addition to breastfeeding. Even though it is visible as the baby is sucking the mother’s breast efficiently, they are not getting an adequate amount of milk due to their inability in suction and compression. Inadequate breastfeeding leads to an infant’s impaired growth and nutrition. And also their feeding time will be more fatiguing and prolonging feeding times (Reilly S. et al., 2013). Therefore they need an alternative method such as a special squeezable bottle to fulfill their nutritional values and milk intake.

Then the other aim was to identify what are the issues affecting weight gain. One of the main reasons identified was the late detection of isolated cleft palate. Late detection of ICP causes feeding issues and weight loss and leads to failure to thrive. Most of the ICP infants were breastfeeding from day 1 (90.63%), it is really important to introduce breastfeeding on day 01 if there are not any swallowing difficulties due to some other reason such as syndromes etc. But it is not good enough to continue only breastfeeding as these infants are not getting an adequate amount of milk from breastfeeding only due to their cleft deformity. Or if someone is continuing only breastfeeding it should be continue under hospital professional's supervision only. Early diagnosis of ICP is essential and it is important to avoid failure to thrive and for early intervention. According to results most of the infants with ICP presented with significant weight loss in more than 87.5% (Table :4). These results shows the need for early diagnosis of ICP and all the health care professionals involve in infants need more awareness of CL and/ or P and their feeding issues. All mothers should be aware whether the baby sucks from the breast and are the infants able to extract milk from breast, their skin colour changes and the number of urine output. And the other important identified reason was late referrals to SLT or Cleft team especially the babies with isolated cleft palate. Because Cleft lip is visible healthcare professionals do not miss it out. But the Isolated Cleft palate is easily missed out as it is difficult to diagnose in infants. (Table :6).

Another important fact traced in this study was most of the infants of CLP were not introduced to breastfeeding at least to develop the baby-mother bond. Even though the baby is not able to get an adequate amount of milk, most of the infants with CL and/or P can be breastfed with support of the mother, if there is no associated syndrome, neurological condition, or breathing difficulty. It helps the mother and baby to develop the bond and also increases the milk flow. It ascertains the need of introducing breastfeeding for all the infants if they are not associating any breathing or neurological difficulties and any syndromic association. According to the results except for mothers of ICL infants, all the other mothers reduced their milk flow within 4 months. It is essential to introduce breastfeeding from day 1, if these infants do not have any identified swallowing difficulty following to a comprehensive swallowing assessment done by a qualified speech and language therapist. According to the results, it shows breastfeeding has introduced for infants with ICP on day 1, but not for the most of the infants with cleft lip and palate even though they did not present with any other medical difficulties, breathing difficulties or dysmorphism. All most all the infants with cleft lip and palate were admitted to the premature baby unit and they have fed with nasogastric or gavage feeds without introducing breastfeeding.

#### V. CONCLUSION:

This study provided clear results to improve health care professionals in cleft lip and palate feeding management. It enhances the need for early diagnosis of isolated cleft palate in the first examination of the baby after delivery to prevent failure to thrive, weight loss or nutritional issues. Then it enhances the need of introducing breastfeeding in babies with isolated cleft palate and cleft lip and/ or palate on day one if there are not any other related swallowing difficulties, associated syndromes, breathing difficulties or neurological difficulties under regular observations such as measuring their weight, urine output and skin color changes to identify whether they are getting an adequate amount of milk if they are only on breastfeeding. If the infants are not getting adequate milk intake according to the symptoms and signs definitely should introduce a suitable alternative method of feeding. Study results showed except for the babies with ICL others needed an alternative method for feeding such as a squeezable bottle to support their feeding in addition to breastfeeding. It enhances the need to increase awareness of feeding methods and swallowing issues in CLP and why they are unable to continue only breastfeeding among health care professionals. Parents should be acknowledged their babies' feeding issues and have some idea about signs and symptoms to identify when the baby is not getting an adequate amount of milk. This study ascertains the validity of introducing breastfeeding for babies with CLP (who are not associated with any other complications) to develop mother and baby interaction, the bond, acceptance of the baby and to increase the milk flow. All the babies with CL and/or P should assess by Speech and Language Pathologists /Therapists for their swallowing abilities and then introduce an applicable method for feeding.

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