

Two Different Methods for Feeding Low Birth Weight Babies

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Preterm, low birth weight babies are often not able to take direct breast feeds and need to be given tube feeds or oral feeds depending on the weight and gestation. Oral feeding may increase energy expenditure and may cause an increase in initial weight loss or poor weight gain. We have compared intermittent nasogastric and oral feeding through a 'palada' in babies of 33-37 week gestation and weight between 1300-1750 g.

Subjects and Methods

All neonates admitted to the neonatal unit with a gestation age of 33 to 37 weeks

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and weight of 1300-1750 g were included. Babies who could not tolerate full enteral feeds within the first 24 hr were excluded from the study. Every alternate baby received either tube feeds or 'palada' feeds. Feeds were given by the nursing staff. Nasogastric tube was inserted by a staff nurse and was retained by adhesive plaster. 'Palada' is a small cup with a spout which facilitates feeding a small neonate. Baby is kept at an angle of 45° and milk is poured through the corner of the babies mouth, the baby is allowed to swallow the milk and then more milk is poured. Expressed breast milk was used for all babies. The volume and frequency of feeds was according to standard nursery protocol.

Babies were kept in the incubator, open warmer or cradle and were given phototherapy when required. Extra fluids (20 ml/mg) were given when babies were on phototherapy or in an open warmer. Weight of all babies was recorded daily, using an electronic weighing machine with a sensitivity of 10 g. Volume of feed, daily calorie intake, daily weight and other details including complications or problems associated with feeding were entered into a proforma. Weight loss in the first 7 days of life was analyzed in the two groups. Statistical analysis was done by student's "t" test.

Results

During a period of 6 months, 32 babies were entered into the study; 75% were small for date, sixteen babies each received tube feeds and palada feeds. In the latter group one baby was excluded because of inability to take feeds well. The mean birth weight, calorie intake and other characteristics are given in *Table I*.

TABLE I -Characteristics of Palada and Tube Fed Babies

	Tube fed (n = 16)	Palada fed (n = 15)
Mean birth weight (g)	1620 ± 114	1560.7 ± 117
Mean caloric intake (Cal)	85.1 ± 8.9	88.9 ± 6.8
Mean weight loss (g)	56.9 ± 71	66 ± 66
Mean duration of hospital stay (days)	10	10.5
No. receiving phototherapy	11	10
No. nursed in incubator	7	7
Open warmer care	2	3

The mean weight loss was 66 ± 66 g in the palada fed group and 56.9 ± 71 g in tube fed group; the difference was not statistically significant ($p = 0.64$). The duration of hospital stay was comparable in both groups.

Two babies in the palada fed group had laceration of the lip. None of the babies in the palada group aspirated milk. There were no complications in the tube fed group. Neonatal problems including hypothermia, hypoglycemia, jaundice and polycythemia were equally distributed in the two groups.

Discussion

The method of feeding preterm, low birth weight babies remains controversial. Sucking swallowing coordination should occur before oral feeding is initiated(1-4). The sucking swallowing coordination occurs usually after 32 weeks and is well developed by 35 weeks(1,3,5). Before this gestation gavage feeding by nasogastric or orogastric tube is the most accepted method of feed(6-8). After 34 weeks and when weight is more than 1500 g oral feeding can be started. The earliest age oral feeding can be started is after 32 weeks and after 1300 g(5). Energy expenditure during oral feeding may result in poor weight gain(2).

The results of the present study show that the mean daily weight loss in the first 7 days was more in the 'palada' fed group; this difference was, however, not statistically significant. All babies in the 'palada' group tolerated feeds well without the risk of aspiration. 'Palada' was a safe method of feeding preterm babies as has been observed by other authors(4).

We conclude that if sucking swallowing coordination has occurred 'palada' feeds can be given as an alternate to tube feeding in babies of 1300 g and gestation of 33 weeks or more. We, however, have studied only a small number of patients and further studies involving larger number of babies need to be done.

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