



## A STUDY ON EFFECT OF ABDOMINAL MASSAGE ON FEEDING INTOLERANCE OF PRETERM NEONATES

**Parvathy S.S.**

Msc (N), Child Health Nursing Sree Gokulam Nursing College Venjaramoodu, Trivandrum-695607

**Mrs Remya U.R.**

Professor, Department of Child Health Nursing Sree Gokulam Nursing College, Trivandrum – 695607

### ABSTRACT

A quasi-experimental research design was studied and conducted in Neonatal Intensive Care Unit (NICU) at selected hospitals Trivandrum. The study sample comprised all preterm neonates (30 preterm neonates) hospitalized in Neonatal Intensive Care Unit (NICU) at selected hospitals Trivandrum. Three tools were used to collect the required data for this study: - Tool I - An interviewing questionnaire sheet, Tool II - Feeding intolerance assessment tool and Tool III - Follow-up sheet. Highly statistical differences were found between the massage group and control group ( $P < 0.01$ ) in the means of the abdominal circumference, the frequency of vomiting episodes, and the gastric residual volume of the preterm neonates with feeding intolerance but the frequency of defecation increased significantly and daily weight gain had increased slightly in the massage group when compared to control group. Concluded that abdominal massage has the potential effect to decrease the gastric residual volume, frequency of vomiting episodes, abdominal distension, and increase the weight and frequency of defecation in preterm neonates. The study recommended changing the nursing practice in NICU nurses by emphasizing the importance of applying abdominal massage twice a day as a safe non-invasive intervention as standard of care in enterally fed preterm neonates.

**KEYWORDS :** preterm; feeding intolerance; abdominal massage

### INTRODUCTION

The way we care for our babies is how they experience. Foetal stage and extra-uterine life form a continuum during which complex series of biologic, physiologic and metabolic changes occur. The neonatal period is described as the period of time immediately after birth and lasting through the first month of extra uterine life, where the neonate adjusts from intrauterine life. The leading causes of mortality rate during the first 4 weeks of life are prematurity. Premature birth as all births born before completed 37 weeks of gestation since the first day of a woman's last menstrual period. Preterm birth survivors are at a higher risk of growth and developmental disabilities compared to their term counterparts. Development of strategies to lower the complications of preterm birth forms the rising need of the hour. Appropriate nutrition is essential for the growth and development of preterm infants. Early administration of optimal nutrition to preterm birth survivors lowers the risk of adverse health outcomes and improves cognition in adulthood.

Feeding intolerance is one of the leading causes of growth failure in preterm neonates. Feeding intolerance is induced by the poor function of the digestive system in preterm infants. As more serious complications such as NEC develop, feeding intolerance causes prolonged hospitalization, increased risk for infections, and complications resulting from the long-term use of parenteral nutrition. Immaturity of the premature neonate's intestinal tract can cause decreased gastric emptying, slower intestinal motility, decreased gastrointestinal hormones, enzymes and juices which all affect overall digestion and high risk for developing feeding intolerance and necrotising enterocolitis. Therefore it is crucial for nurses to detect this condition as early as possible and use intervention for tackling this problem to improve new born outcome.

Massage therapy can stimulate the parasympathetic activity and induce a more effective response of the digestive system by accelerating peristalsis, decreasing abdominal distension, accelerating the bowel transit time, increasing the frequency of defecation, and decreasing the frequency of vomiting episodes in the daytime. Massage is thus an intervention that may be useful in premature neonates. Massage therapy as non-invasive procedure that may have positive effect on physical and developmental growth of

premature neonates.

An experimental study on efficacy of abdominal massage on feeding intolerance of preterm neonates with an aim to evaluate the efficacy of abdominal massage on feeding intolerance in preterm neonates. 60 preterm samples were included in the study. The result shows highly statistically significant difference between the first day and fifth day related to feeding intolerance measurement parameters of the massage group and the means of the abdominal circumference, the frequency of vomiting, and the gastric residual volume in the massage group had decreased significantly in the fifth day of intervention of abdominal massage, as compared with those in the first day and the daily weight gain had increased significantly. The abdominal massage has the potential effect to decrease the feeding intolerance.

### MATERIALS AND METHODS

The study followed a descriptive research design using a quantitative approach. Formal permission was obtained from institutional research committee and ethical committee and neonatology department. Data was collected over a period of 4 weeks. A total 30 samples satisfying the inclusion criteria were selected by consecutive sampling technique from selected hospitals Trivandrum district. The purpose of the study was well explained to the study subjects and informed written consent was obtained from the samples. The investigator maintained good interpersonal relationship with the subjects and confidentiality was maintained for each subjects. The tool used in the present study as follows,

- Tool 1: Interview questionnaire
- Tool 2: Feeding intolerance assessment tool
- Tool 3: Follow up sheet.

### RESULTS

#### A. Preterm neonates with feeding intolerance

In experimental group 5 preterm belongs to high feeding intolerance category and 10 belongs to moderate category. In control group 4 belongs to high risk group and 11 in moderate risk group. No one in the low risk category.

#### B. Sample Characteristics

In experimental group 66.7% of the mother belongs to the

gestational age group of 32-36 weeks and 33.35% belongs to the gestational age group of 28-32 weeks of gestation. In control group 80% belongs to the gestational age group of 32-36 weeks of gestation and 20 % belongs to 28-32 weeks of gestation. In experimental group 73.3% and in control group 53.3% were belongs to birth weight of 2.5 kg. In experimental group more than half of the subjects were female and in control group 53.3% were male. In experimental and control group no one had undergone blood transfusion. Majority (66.70%) of the subjects in the experimental group and 73.30% of the subjects in the control groups had oxygen therapy. 33.30% of the subjects in the experimental group and 26.7% of the subjects in the control group had no oxygen therapy. Majority (73.30%) of the subjects in the experimental group and 60% of the subjects in the control group were in mother's and formula feed. 6.7% of the subjects in the experimental group and 20% of the subjects in the control group were in mother's milk only. Equal percentage (20%) of the subjects in both the experimental and control group were in formula feed only. Majority (100%) of the subjects in both the experimental group and control group had no minor congenital anomalies.

**C. Maternal characteristics and medical data.**

Regarding mother's personal characteristics, result of the current study revealed that majority (46.7%, 60%) of them in both experimental and control group respectively were in the age group of 21-25 yrs. The majority and most of them ( 60%, 66.7%) in both groups had university education and regarding the occupation majority of 33.3% in experimental group had private job and self-employees , were as in control group majority (46.7%) of them had private jobs. A regard their medical data, it was observed that all (100%) of them in both the group had antenatal follow up and care during their pregnancy. Regarding the type of pregnancy 100% of them in both the experimental and control group had single pregnancy respectively. Forty percentage of them in experimental group and 26.7% in control group use medications during their pregnancy. No one in both the groups had any complications during pregnancy. Regarding the type of delivery majority (73.3%, 86.7%) of experimental group and control group were being delivered through caesarean section.

**D:Effect of abdominal massage on feeding intolerance of preterm neonates in experimental group and control group.**

Feeding intolerance parameter	Mean difference	df	t value	p value
Abdominal circumference	4.700	28	11.698***	0.000
Gastric residual volume	2.166	28	6.198***	0.000
Frequency of defecation	4.66	28	10.029***	0.000
Frequency of vomiting	0.800	28	2.103*	0.045
Daily weight	0.060	28	1.711	0.098

\*\*\*significant at .001 level

\*\*significant at .05 level

**E. Association between feeding intolerance of preterm neonates with selected clinical variable.**

There is no significant association in feeding intolerance of preterm neonates and selected clinical variables.

**DISCUSSION**

In the present study, it was found that comparison between the first day and third day means of measurements parameters related to feeding intolerance among the experimental and control group. Highly statistically significant difference found between the pre and post-test related to feeding intolerance measurements parameters of the experimental group (p<0.001) except daily weight. In which abdominal circumference was decreased from (31.86 + 0.9154) in the first day to (28.86 + 1.187) in the third day, t value (11.25) was

statistically significant at p<0.001 while gastric residual volume (GRV) was decreased from (3.50 + 1.133) in the first day to (1.66 + 0.617) in the third day, t value(7.017) was statistically significant at p<0.001. The frequency of vomiting was decreased from 1.133 + 1.187) in the first day to (0.133 + 0.351) in the third day, t value (3.87) was statistically significant at p<0.001. Frequency of defecation was increased from (3.73 + 0.883) to (6.26 + 0.883) in the third day, t value (9.25) was statistically significant at p<0.05 and finally daily weight was slightly increased from (2.452 + 0.481) in the first day to (2.462 + 0.465) in the third day, t value (0.370) was not statistically significant. Hence p>0.05. There was no statistically significant difference found between the means of the first day and third day of the control group related to abdominal circumference, gastric residual volume (GRV), frequency of vomiting, frequency of defecation and daily weight gain. Then the comparison between the post-test means of measurements parameters related to feeding intolerance of experimental group and the control group. Highly significant statistical difference found between the post-test related to feeding intolerance measurements parameters of the experimental group and control group (p<0.05) except daily weight.

**REFERENCES**

1. Maha Ebrahim Fouda , Rahma Soliman Bahgat , Abd Elrahman Mohammed Elmashad, Hanan Mohammed Elsaadany . Effect of Abdominal Massage Therapy on Feeding Tolerance of Premature Neonates. IOSR Journal of Nursing and Health Science (IOSR-JNHS) e-ISSN: (2018); Volume 7(Issue5): 2320-1959. available at <https://www.semanticscholar.org/paper> (accessed 10 March 2020).
2. Fathia Zaky Mohamed, and Eman Saied Ahmed. Efficacy of Abdominal Massage on Feeding Intolerance of Preterm Neonates. American Journal of Nursing Research (2018); vol. 6, (no. 6): 371-379. Available at <http://www.sciepub.com/AJNR/abstract/9547> (accessed 28 July 2019).
3. Kumar RK, Singhal A, Vaidya U, Banerjee S, Anwar F, Rao S. . Optimizing Nutrition in Preterm Low Birth Weight Infants-Consensus Summary. 2017 May 26; available at <https://www.ncbi.nlm.nih.gov/pubmed/28603716> (accessed 28 August 2019).
4. Shaeri M, Ghadami A, Valiani M, Armanian AM, Amini Rarani S. Effects of Abdominal Massage on Feeding Tolerance in Preterm Infants Hospitalized in Selected Hospitals of Isfahan Iran. Int J Pediatr 2017; vol5(3): available at <https://www.researchgate.net/publication/316650416> (accessed 26 December 2019).
5. Tekgündüz, K.Ş., Gürol, A., Apay, S.E. et al. Effect of abdomen massage for prevention of feeding intolerance in preterm infants.. Ital J Pediatr 40, 2014; 89. <https://doi.org/10.1186/s13052-014-0089-z> (accessed 24 July 2019).