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EFFECTS OF DONOR HUMAN MILK ON PRETERM INFANTS WEIGHING LESS THAN 1500 GRAMS.

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Introduction

Donor human milk (DHM) became available in Latvia when the Human Milk Bank was established in 2022. Studies suggest that VLBW infants fed DHM experience lower rates of LOS, mortality and NEC and achieve full enteral feeding earlier compared to formula-fed infants. This is the first study in Latvia on DHM and its impact on VLBW preterm infants.

Materials and Methods

This is a retrospective cohort comparative study in the Children's Clinical University Hospital in Riga from January 2022 to November 2023, that included preterm infants with VLBW. Data were collected from medical records. Three groups were differentiated based on the type of enteral feeding received in the first month of life: (Group 1: MOM: MOM/ MOM + fortifier (F), Group 2: Formula: (MOM+F+formula/ formula) and Group 3: DHM: (DHM+MOM + F/ DHM + F+formula/ DHM+formula). Data were analyzed using SPSS software.

Results

Among the 156 patients included (86 girls, 70 boys), median weight and gestational age were 1135 grams (450-1500) and 29+0 days (23+5 –36+1), respectively. There were 82 patients in Group MOM, 41 in Group Formula, and 33 in Group DHM. Results show no statistically significant difference between groups in terms of birth weight for gestational age ($p=0.599$) or mortality ($p=0.148$) or in the incidence of LOS ($p=0.398$) or NEC ($p=0.197$). The age in days at which full enteral feeding (120ml/kg) was reached was not significantly different between groups ($p>0.05$). There was significant difference between groups ($p=0.001$) that showed lower median weight gain during the first month in patients that received DHM compared to MOM 460g and Formula 498g groups, with DHM at 327g.

Conclusion

This study found no significant reduction in LOS, NEC or mortality, nor faster full enteral feeding with DHM. However, infants on DHM showed slower weight gain potentially affecting neurological development. Limited patient numbers prevent definitive conclusions on enteral feeding. Future research needs larger cohorts, longer observation, and more DHM that strive to provide maximum DHM to infants who cannot receive MOM without formula supplementation.

None declared.



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GROWTH IN VERY LOW BIRTHWEIGHT (VLBW) NEONATES TUBE FED WITH 2 DIFFERENT AMOUNTS OF MILK DURING HOSPITALIZATION-PRELIMINARY RESULTS

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Introduction: VLBW neonates on tube feeding during hospitalization have usually an upper limit of milk volumes (either human milk or special formula) of 180-200ml/kg/d for optimal growth. There are some concerns that higher volumes are needed for achievement of optimal growth and neurodevelopment. This is a preliminary prospective study comparing two different feeding volumes in growth of VLBW hospitalized neonates.

Material and methods: A total of 36 VLBW neonates were fed either up to 200 or >200ml/kg/d after stopping TPN and up to the time of establishment of either breast or bottle feeding or till 36 weeks corrected age. Perinatal and postnatal parameters as well as anthropometrics were collected in several time points. A 1:2 randomization was made.

Results: Of 36 preterm neonates 12 were fed up to 200ml/kg/d (group A) and 24 >200ml/kg/d (group B). The two groups did not differ in BW, gestational age, sex. The mean birth weight of neonates was 1266gr in group A, 1290gr in group B and the mean gestational age was 29.8 weeks in group A (versus 29.3 wks in group B). The mean volumes of milk was 200ml/kg in neonates of group A, 272ml/kg in group B, with mean calories of 161kcal/kg and 220kcal/kg in group A and B respectively. No differences were found in incidence of sepsis, necrotizing enterocolitis, patent ductus arteriosus or BPD between the two groups. At 6 weeks postnatally the group B neonates had higher body weight (1982gr compared to 1887gr), while body length and head circumference did not differ.

Conclusions: Preterms fed >200ml/kg/d had higher body weight at 6 weeks postnatal but similar body length and head circumference. They did not present higher incidence of any morbidity during the same period. As these are preliminary results, higher sample and further follow up is needed to establish if higher milk volumes are beneficial in growth of VLBW infants.

None declared.



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Multiparameter study of breast milk feeding in neonates of NICU

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INTRODUCTION: Studies support that the duration of feeding newborns with mother's milk is positively related to their growth and health. This study investigates potential factors that influence the type of feeding, and the post-discharge duration of feeding with breast milk.

PATIENTS AND METHODS: 270 neonates (77 premature), hospitalized between 1/1/2019-31/12/2019 in our department and received exclusive or mixed feeding with breast milk for at least 1 month after discharge, were retrospectively enrolled. The association of epidemiological and clinical parameters with breast milk feeding and its duration were studied using multivariate binomial and Cox regression, respectively.

RESULTS: The mean duration of breastfeeding was 7.3±3.4 months (1-20 months). 42.2% of the newborns (n=114) were fed exclusively with breast milk. Breastfeeding is independently associated with age at first birth ≤28 years (OR:3.381, p<0.001), prior breastfeeding experience (OR:2.603, p=0.013), prematurity (OR:0.236, p=0.021), duration of labor ≤34 weeks (OR:0.050, p<0.001) and skin-to-skin contact (OR:2.737, p=0.016). The duration of breastfeeding after discharge is independently associated with prematurity (HR:0.491, p=0.021), days of hospitalization in the NICU ≤7 (HR:1.963, p=0.013), initiation of breastfeeding within 48 hours (HR:2.576, p<0.001), skin-to-skin contact (HR:1.637, p=0.015) and administration of breast milk in the NICU (HR:0.085, p<0.001).

CONCLUSIONS: Prematurity is an important independent factor that negatively affects breastfeeding and its duration. Newborns of younger and first-time mothers, who come into direct skin-to-skin contact with the mother, start breastfeeding early (≤48 hours) and are hospitalized in the NICU for <7 days, have a significantly higher probability of being fed exclusively, and for a longer period, with breast milk.

"None declared".



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From Tiny Beginnings to Thriving Toddlers: Unravelling Growth Trajectories in NICU Graduates from a Tertiary Centre in India

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INTRODUCTION:

The occurrence of low birth weight and preterm birth in India stands at 18% and 13% respectively. Growth patterns vary between babies born at term and premature. Catch-up growth is usually seen in the first three years of life. Literature regarding growth patterns in premature babies is sparse in the Indian population. Our study attempts to fill this gap in all babies born under 35 weeks gestation.

MATERIAL AND METHODS:

This retrospective observational investigation was conducted at a tertiary centre in Southern India. Standardized electronic growth chart calculators were used to evaluate growth patterns. Growth was documented by measuring weight, head circumference (HC), and length for all infants born less than 35 weeks gestation at birth, for all births in the last seven years. Follow-up measurements were taken at discharge and follow-up till 24 months. Data was gathered from the electronic medical records. Catch-up growth was defined as a net increase in Z score of 0.67, while catch-down growth was defined as a net decrease in Z score of 0.67.

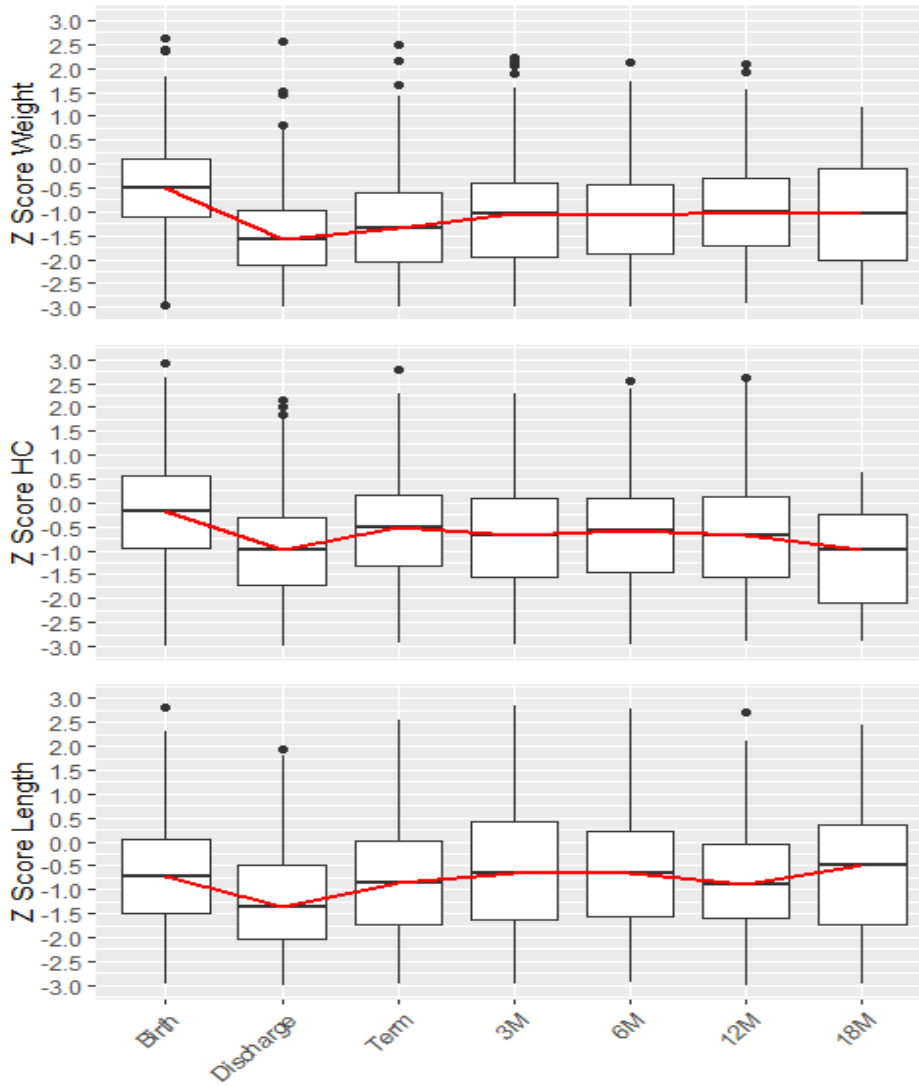
RESULTS:

The sample size was 653 preterm infants with a median gestational age at birth of 32 weeks (IQR: 29.57, 33.43). The median birth weight was 1440 grams (IQR: 1050, 1860) with a median birth weight z score of -0.51 (IQR: -1.12, 0.11). 26% of babies were small for gestation age at birth. The boxplots in Figure 1 show the distribution of z-scores for the three anthropometric measurements over time. There was a drop in the z score at discharge, which gradually improved for weight and length. 76% demonstrated catch-up growth by 12 months. For weight, height and head circumference, 23%, 38%, and 52% of babies reached their birth Z scores by 18 months age.

CONCLUSIONS:

This is the first study that describes growth patterns amongst preterm NICU graduates from India. Our study has demonstrated sub-optimal post-discharge growth, failing to meet the international and national growth standards. Further studies are needed to understand the underlying etiology of the growth failure.

None declared





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EVALUATION OF A BREASTFEEDING EDUCATION PROGRAM FOR PRIMIPAROUS WOMEN AT HEDI CHAKER HOSPITAL, SFAX: A COMPARATIVE CASE/CONTROL STUDY

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INTRODUCTION:

Knowledge, attitudes, and self-efficacy about breastfeeding are modifiable factors related to continued breastfeeding and can be influenced by educational programs. In Tunisia, the rate of exclusive breastfeeding remains very low and there is a lack of information in the scientific literature about this practice in Tunisian hospitals. The aim of this research project is to evaluate the effectiveness of an educational program for first-time mothers aimed at improving breastfeeding knowledge, attitudes and self-efficacy, as well as its impact on the duration and exclusivity of breastfeeding during the first three months of life.

MATERIAL AND METHODS:

This is a comparative case/control, longitudinal, quasi-experimental study with a control group (n=105/group). Women in the control group received the usual care of the postpartum service and 3 monthly calls after discharge. While women in the case group received an education session about breastfeeding between 12 hours and 24 hours after birth and telephone follow-up at 7 days, 14 days after discharge. (BFK-A), (IIFAS-A), and (BSES-SF) were used to measure knowledge, attitudes, and breastfeeding self-efficacy. A bivariate model – Binary Logistic Regression. Repeated-measure mixed ANOVA test, and a Multivariate Binary Logistic Regression Model was used.

RESULTS:

100 mothers in the control group and 99 mothers in the case group were analyzed. The two groups were similar in all baseline characteristics. After 3 months Mothers in the case group reported higher knowledge, attitude, and self-efficacy scores than those in the control group (p=0.000). There was a significant improvement in interaction with time within both groups (p=0.000), but there was a significant difference in improvement between the two groups in favor of the case group (p=0.000). This intervention resulted in a significant difference between the two groups in the duration of breastfeeding ($X^2= 14.015$; p=0.000) and exclusivity rate (Case group: 69.7%, Control group: 17%, $X^2=56.297$; p=0.000). knowledge scores, duration of exclusive breastfeeding and peer demand for help were predictors of the intervention effect at 3 months (Pseudo R two = 0.934).



CONCLUSIONS: This project demonstrated that postnatal education is effective in improving breastfeeding knowledge, attitudes, self-efficacy and practices. Further research that incorporates antenatal education is needed.

None declared



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The role of vitamin D during pregnancy on fetal growth, bone and neurocognitive biomarker of offspring age 2 years

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Background

Incidence stunting in Indonesia has decreased, but did not meet WHO standards (<20%). One of the important micronutrient in fetal programming and stunting is vitamin D.

Objective

Verify the role of vitamin D deficiency during pregnancy bone growth and neurocognitive biomarker's offspring aged 2 years through fetal growth.

Method

The study design was a prospective cohort. A total of 120 singleton and live pregnancy at 24-28 weeks of gestation measured 25(OH)D levels and ultrasound. Subjects were divided into 2 groups, deficient and normal. Exclusion criterias were systemic disease, chronic and congenital anomaly. Fetal growth were plotted to WHO chart. Offspring serum levels of bALP and osteocalcin for bone growth, BDNF for neurocognitive biomarker examined in offspring aged 2 year. Data analysed to know Risk Relative or RR (95% CI) after controlled confounding variables.

Result

RR (95% CI) the effect of vitamin D deficiency on fetal growth, bone and neurocognitive biomaker in offspring aged 2 years were 0,74(0,24-2,34), 0,99(0,38-2,58) and 1,45(0,63-3,4) respectively after controlled for confounding variables. RR (95% CI) for the effect of fetal growth on bone and neurocognitive biomarker were 2,35 (0,58-9,5) and 1,06 (0,35-3,1) respectively. Confounding variables of mother were controlled such as age, parity, BMI, anemia (hemoglobin and ferritin), food intake, sosioeconomic, prematur, height, level of zinc, IGF-1, CRP and PTH. Confounding variables of offspring were controlled for food intake, level of IGF-1, calcium, zinc, ferritin and vitamin D.

Conclusion

Vitamin D deficiency during pregnancy do not give effect to disorder of bone and neurocognitive biomarker in offspring either directly or through fetal growth.

Keywords

Maternal level 25(OH)D; WHO fetal growth; bALP; osteocalcin; BDNF

none

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