September 20th, 2023 08:30 - 9:00

POSTER WALK – NUTRITION 2

ID 57. EVALUATION OF THE EFFECT OF BREAST MILK STORAGE CONDITIONS ON THE VIABILITY OF CELLS IN BREAST MILK

Doctor Ozge Surmeli Onay[1], Doctor Merve Tutal[1], PhD Burcugul Altug Tasa[2], Professor Ozge Aydemir[1], Doctor Tugba Barsan Kaya[1], Professor Ayla Eker Sarıboyacı[2], Professor Ayse Neslihan Tekin[1]

[1]Division of Neonatology, Department of Pediatrics, Faculty of Medicine, Eskişehir Osmangazi University, Eskisehir, Türkiye, [2]Cellular Therapy and Stem Cell Production Application, Research Centre (ESTEM), Department of Stem Cell, Institute of Health Sciences, Eskişehir Osmangazi University, Eskisehir, Türkiye

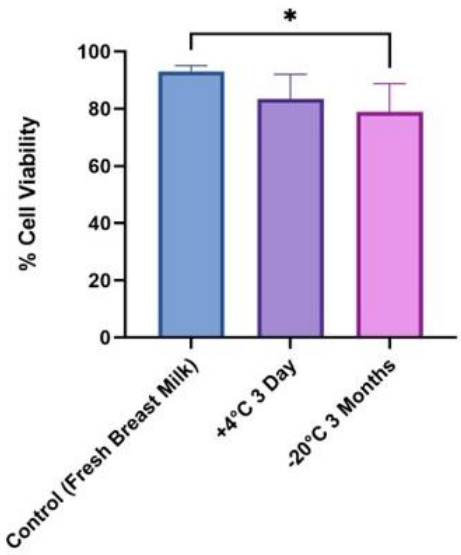
Background: It has been reported that fresh expressed breast milk (FBM) can be safely stored at room temperature for three hours, at +4 ˚C for three days and below –18 ˚C for three months. In breast milk, in addition to macrophages, lymphocytes, neutrophils, and epithelial cells, it has also been demonstrated that there are 1%—30% of "stem cells" present. Using a flow cytometric PI viability test, we aimed to assess objectively how the recommended storage conditions affect the viability of cells in FBM. Furthermore, among the viable cells in BM, the CD90 and CD73 profiles, which are positive indicators exclusive to mesenchymal stem cells, were examined by flow cytometry.

Methods: An experimental study was conducted in a prospective, methodological design. Mature FBM (>15th day) samples were obtained from five healthy volunteer mothers aged 22–30 years, who were healthy, did not smoke and/or use any medication, and gave birth at term. After the mothers manually expressed 30 ml of FBM into a sterile plastic container, under aseptic conditions FBM was separated into

three sterile centrifuge tubes of 10 mL each. PI viability analyses and CD90 and CD73 profiles were studied in FBM immediately (Control) by flow cytometry. The analyses were repeated in FBM kept in the refrigerator at +4 oC for three days (Group I) and frozen at –20 oC for three months (Group II).

Results: In our study, total cell viability was 92% in the FBM/Control group, while total cell viability was 83% and 78% in Groups I and II, respectively ($p<0.05$) (Figure 1). In FBM, 12% of total cells with 92% viability expressed CD90 and 20% expressed CD73. It was found that in Group I, CD90 and CD73 were expressed by 18% and 20%, respectively, of the 83% viable cells.

Conclusion: In order for infants to benefit the most from naturally therapeutic FBM, it is best practice to give them FBM as soon as possible. Our results demonstrated that cell viability of FBM decreased over time even under appropriate storage conditions. Further data and markers are needed to investigate the affect of storage conditions on FBM stem cell immunophenotype.



Cellular viability in fresh breast milk according to storage conditions. Results are expressed as mean SD. *indicates a significant difference compared to the Control Group ($p < 0.05$)

Cellular viability in fresh breast milk according to storage conditions. Results are expressed as mean SD. *indicates a significant difference compared to the Control Group ($p < 0.05$)

None declared

ID 686. The impacts of single preterm human donor milk compared to mother´s own milk on growth and body composition

Doctor Christoph Binder[1], Esther Teunissen[2], Doctor Theresa Kainz[1], Doctor Elisabeth Calek[1], Karin Harreiter[1], Professor Angelika Berger[1], Professor Alexandra Thajer[1]

[1]Medical University of Vienna, Comprehensive Center for Pediatrics, Department of Pediatrics and Adolescent Medicine, Division of Neonatology, Intensive Care and Neuropediatrics, Vienna , Austria , [2]Radboud University Nijmegen, Nijmegen, Netherlands

If mother´s own milk (MOM) is not available, pooled term human donor milk (HDM) is com–monly used for preterm infants' nutrition. Compared to MOM, term HDM contains less protein and fat, and is associated with impaired growth. HDM from mothers of preterm infants is an al–ternative source and contains higher protein levels compared to term HDM, but the impact on growth and body composition is unclear. (2) Methods: Infants born below 32 weeks of gestation and below 1500grams between 2017–2022, who underwent air displacement plethysmography (Pea Pod®) to determine body composition (FFM: fat–free mass and FM: fat mass) at term–equivalent age, were included. A comparison between infants fed with MOM >50% (MOM–group) and single preterm HDM >50% (HDM–group) was conducted. (3) Results: 351 in–fants (MOM–group: n = 206; HDM–group: n = 145) were included for analysis. Median FFM–Z–Score (MOM–group: –1.09; IQR: –2.02, 1.11 and HDM–group: –1.13; IQR: –2.03, 1.12; p = 0.96), FM–Z–Score (MOM–group: 1.06; IQR: –0.08, 2.22 and HDM–group: 1.19; IQR: –0.14, 2.20; p = 0.09), and median weight growth velocity (MOM–group: 23.1g/kg/d; IQR: 20.7, 26.0 and HDM: 22.5g/kg/d; IQR: 19.7, 25.8; p = 0.15) were not significantly different between the groups. (4) Conclusion: Single preterm HDM is a good alternative to support normal growth and body composition.

None declared.

ID 1036. HUMAN MILK-DERIVED FORTIFIER (HMDF) FOR EXTREMELY LOW BIRTH WEIGHT (ELBW) INFANTS: AN ANALYSIS OF THE FIRST IRISH EXPERIENCE.

Professor Roy Philip[1], Irene Beirne[2], Roisin M Kelly[2], Niamh Murphy[2], Eilis Hennessy[2], Deirdre O'Connell[2], Dr Niazy Al-Assaf[2], Dr Helen Purtill[3], Professor Deirdre McGrath[4], Professor Colum P Dunne[5]

[1]University Maternity Hospital Limerick and University of Limerick School of Medicine, Limerick, Ireland, [2]University Maternity Hospital Limerick, Limerick, Ireland, [3]Department of Statistics and Mathematics, University of Limerick, Limerick, Ireland, [4]University of Limerick , Limerick, Ireland, [5]University of Limerick School of Medicine, Limerick, Ireland

Background: Fortification of mother's own milk (MOM) or donor human milk (DHM) with cow's milk-derived fortifier (CMDF) remained the standard practice for very low birth weight (VLBW) infants. Recognition of gaps in the traditional nutritional enrichment strategies has led to increasing acceptance of human milk-derived fortifier (HMDF). Exclusively offering human milk and human milk-derived products to extremely low birth weight (ELBW, <1000 gm) infants constitutes an exclusive human milk diet (EHMD). We aim to analyse first Irish experience of EHMD offered to ELBW infants.

Methods: Epidemiological and clinical characteristics of ELBW infants exposed to EHMD from March 2019 to February 2023 at University Maternity Hospital Limerick (UMHL) were compared to a similar population of preceding four years (March 2015 to February 2019). Mean daily weight gain (DWG), duration of total parenteral nutrition (TPN), duration of long line usage, days on IV antibiotics, length of stay (LOS), incidence of necrotising enterocolitis (NEC, Bell 2 or above), late-onset

neonatal sepsis (LONS), bronchopulmonary dysplasia (BPD), intraventricular haemorrhage (IVH), and retinopathy of prematurity (ROP) were analysed. Prospectively collected pre-submission data for Vermont Oxford Network (VON) benchmarking was utilised for retrospective. Research Ethics Committee approval was sought for observational study, and Poisson regression and rate ratio analysis with 95% CI were conducted.

Results: Entire (93) ELBW cohort from March 2015 to February 2023 received human milk (MOM / DHM or a combination). All infants of latter group (44) received HMDF and all from former group (49) received CMDF. Mean gestational ages (26.4 vs 26.2), birth weights (788 gm vs 762 gm) and sex ratios (M:F 1: 1.1 and 1:1.2) were comparable. There were three NEC (3/49) among CMDF exposed cohort and one (1/44) among EHMD cohort (at transition to CMDF). Significant reduction in duration of long lines, TPN, LONS (all, p 0.01) and LOS, DWG (both p 0.02) were observed among EHMD cohort. Trend towards improved ROP rate (p 0.04) and no significant differences between groups for IV antibiotics, BPD or IVH.

Conclusion: An exclusive human milk diet appears to offer clinical benefits to a regional ELBW cohort, evaluated for the first time in Ireland.
Presenting author has received in the past, honorariums / conference expenses / consultancy fees from Prolacta Bioscience, Nestle, GlaxoSmithKline and Sanofi.

ID 1032. Volume of breast milk production at key time points among preterm infants born before 35 weeks and admitted to our neonatal unit.

Doctor Maria Iatan[1], Dietician Roberta McCarthy[1], Doctor Madeleine Murphy[1]

[1]National Maternity Hospital Holles St, Dublin, Ireland

Background

Maternal milk protects against necrotising enterocolitis and other morbidities among preterm infants, and guidelines advise early initiation of enteral feeds after birth with expressed breast milk (EBM). Early frequent effective expressing improves EBM volumes and helps with coming to volume for mothers whose infants are admitted to the neonatal unit. Poor supply at 14 days of age i.e. < 500ml EBM per 24 hours is linked with lactation failure, non–sustained use of maternal milk, and failure to progress to breastfeeding. We wished to gather baseline data and identify possible areas of intervention in order to improve breastmilk volumes and progression to breastfeeding in our neonatal unit.

Methods

We designed a questionnaire and prospectively collected data from mothers of babies born < 35 weeks gestational age (GA) and admitted to our neonatal unit.

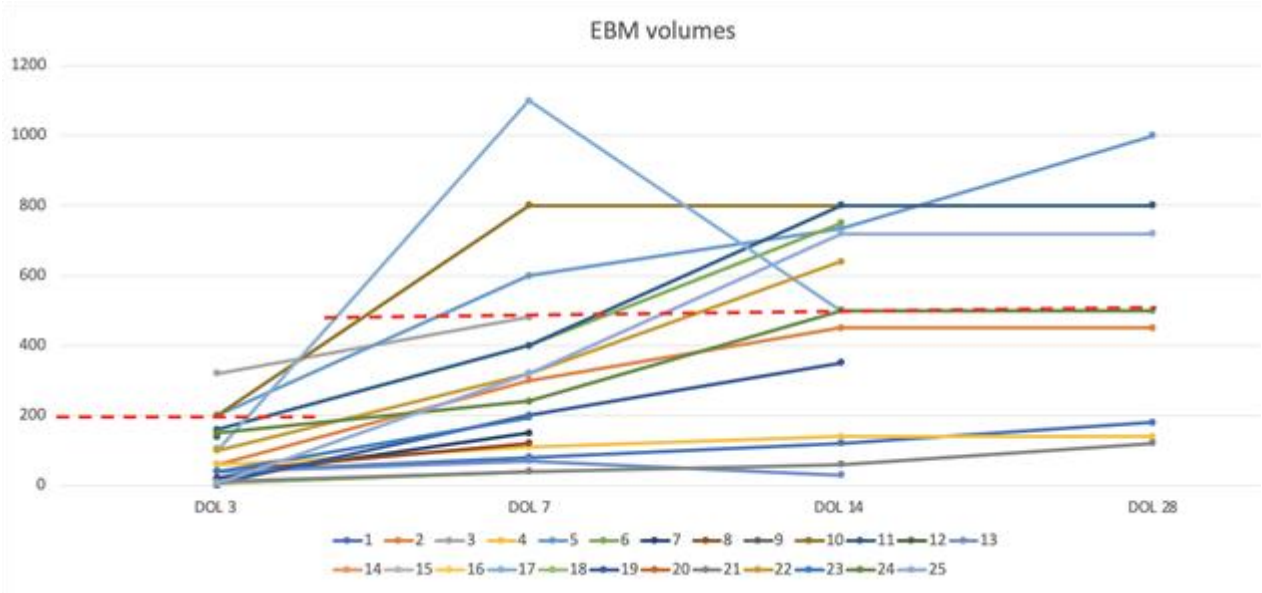
Results

From Oct 2022 until March 2023, we collected information from 25 mothers of preterm infants who were expressing milk for their infants (figure); 80% of infants were born < 32 weeks' GA. Of all mothers, 65% were primiparous whereas 28% had previous breastfeeding or expressing experience and the remainder had formula fed. Overall, 44% received assistance with expressing immediately after birth while still in

the delivery ward or in theatre recovery; for infants born < 28/40 GA, more mothers (50%) received early assistance. Improved rates of early hand expression were observed in mothers admitted to the delivery ward (50%) compared to those in theatre recovery (35%). By days of life 7 and 14, 16% and 54% of mothers achieved the minimum target volumes of EBM (i.e. > 500ml EBM/ 24 hours) respectively.

Conclusion

Many mothers do not achieve target EBM volumes at key time points. This information provides us with baseline data for our planned quality improvement project to target key areas for improvement through iterative plan–do–study–act cycles. Key target areas include ongoing education for delivery and theatre staff regarding initiation of hand expression immediately after birth and the introduction of an expressing assessment tool for all mothers of premature babies admitted to the neonatal unit.



None declared

ID 875. Human milk processing and its effect on protein and leptin concentrations

Doktor Christoph Binder[1], Professor Sabina Baumgartner-Parzer[2], Liliana-Imi Gard[2], Professor Angelika Berger[1], Professor Alexandra Thajer[1]

[1]Comprehensive Center for Pediatrics, Department of Pediatrics and Adolescent Medicine, Medical University of Vienna, Vienna, Austria, [2]Division of Endocrinology and Metabolism, Department of Internal Medicine III, Medical University of Vienna, Vienna, Austria

(1) Background: For the storage of human milk (HM), freezing, thawing, and/or pasteurization are routinely used in neonatal intensive care units. We aimed to analyze the effects of different HM processing types on the nutritional contents in HM, adipose tissue, and the neuroprotection markers leptin and adiponectin. (2) Methods: HM samples from 136 mothers of preterm and term infants (gestational age 23 + 0 to 41 + 6) were collected and divided into four groups: (i) fresh HM, (ii) fresh pasteurized HM, (iii) thawed HM, and (iv) thawed pasteurized HM. The macronutrients were analyzed by mid-infrared transmission spectroscopy and the adiponectin and leptin were analyzed by high-sensitivity adiponectin and leptin enzyme-linked immunosorbent assay (ELISA). (3) Results: No significant differences were observed in the protein, carbohydrate, or fat concentrations between the HM processing types. The leptin levels were significantly lower after pasteurization in comparison to HM without pasteurization ($p < 0.001$). The protein levels in extremely preterm HM were significantly lower compared to those in moderate/late preterm HM and term HM ($p < 0.05$). (4) Conclusions: HM processing had an impact on leptin concentrations but no effect on the protein level. These data support the use of unpasteurized human milk for preterm infants' nutrition and normal brain development. The protein levels of

the milk of mothers from preterm compared to full-term infants differed, underlining the importance of individualized target fortification.

None declared.

ID 440. Human Milk-Based Fortifier Allows Earlier Fortification without Increased Risk Compared to Cow Milk-Based Fortifier

Dr. Sandra Sullivan[2], Dr. Robert Huston[3], Dr. Sadhana Chheda[4], Ms. Gabriella Mudekunya[4], Ms. Cynthia Guevara[5], Ms. Amanda Timmerman[5], Professor Martin Lee[1]
[1]UCLA, Los Angeles, United States, [2]HCA Florida North Florida Hospital, Gainesville, United States, [3]Randall Children's Hospital at Legacy Emanuel, Portland, United States, [4]TTUHSC–El Paso, El Paso, United States, [5]El Paso Children's Hospital, El Paso, United States

Background: Human milk–based fortifier (HMBF) as part of an exclusive human milk diet is associated with improved outcomes for premature newborns. Impact of timing of fortification on common sequelae of prematurity has not been evaluated.
Methods: Raw data from 3 studies (Sullivan et al, 2010; Chheda, 2023 [unpublished]; and Huston et al, 2018) included 785 premature infants weighing <1250g at birth who received either HMBF or cow milk–based fortifier (CMBF). Logistic regression, with and without adjustment for gestational age, assessed the relationship between type of fortifier, timing of fortification, and the occurrence of serious comorbidities of prematurity.

Results: Infants who received HMBF (n=611) were less mature (27.6 ± 2.5 weeks vs 28.1 ± 2.4, p=0.026), and lighter (950 ± 242 grams vs 1012± 250, p=0.008), yet were fortified a week earlier (14.0 ± 9.6 vs 20.8± 14.1 p<0.00001) than those who received CMBF (n=174). Table 1 shows Odds Ratios of serious adverse outcomes by fortifier type.

Conclusion: Timing of fortification is associated with risk of serious adverse outcome, with earlier fortification being more beneficial than later, and persisting after adjustment for gestational age. While true for both fortifiers, HMBF exhibited a more robust relationship than CMBF, suggesting that HMBF may begin earlier with similar or better outcomes than CMBF.

	HMBF		CMBF	
Outcome	Unadjusted Odds ratio; p-value	GA Adjusted Odds ratio; p-value	Unadjusted Odds ratio; p-value	GA Adjusted Odds ratio; p-value
NEC	1.036*; 0.014	1.012; 0.51	1.02; 0.103	1.018; 0.202
NEC surgery	1.037; 0.052	1.008; 0.73	1.018; 0.217	1.010; 0.525
ROP stage 3/4	1.098; <0.00001	1.058; 0.00008	1.019; 0.349	1.004; 0.884
Sepsis	1.094; <0.00001	1.067; <0.00001	1.062; 0.00085	1.050; 0.011
BPD	1.079; <0.00001	1.031; 0.016	1.104; <0.00001	1.085; 0.00025
PDA	1.124; <0.00001	1.089; <0.00001	1.098; <0.00001	1.083; 0.00018
Death	1.030; 0.073	1.011; 0.581	1.014; 0.542	0.995; 0.866

*example: OR=1.036 implies that for each day of earlier fortification, the odds of NEC lower by 3.6%

Odds Ratios of serious adverse outcomes by fortifier type.

Odds Ratios of serious adverse outcomes by fortifier type.

Martin Lee is an employee of Prolacta Bioscience.

No other conflicts of interest declared.

ID 533. An Exclusive Human Milk Diet May Improve Essential Fatty Acid Intake for Extremely Low Birth Weight Infants

Doctor Jenelle Ferry, MD[1], Doctor Brittany Bundy, Doctor Martin Lee

[1]Pediatrix/st. Joseph Women's Hospital, Tampa, United States

Background: Long chain poly unsaturated fatty acid (FA) intake in preterm infants is necessary for improved neurodevelopmental outcomes, has been associated with decreased morbidities, and is required for adequate linear growth. Preterm infants are born prior to peak fetal accretion periods for docosahexaenoic acid (DHA) and arachidonic acid (AA), levels decrease significantly in the first weeks of life, and deficits are more pronounced in lower birth weights. Wide variations of FA are present in human milk, and supplementation is required. We hypothesize that an exclusive human milk diet (EHMD), utilizing mom's own milk or donor human milk with human-derived fortifiers can support essential FA intake and mitigate deficits early in life.

Methods: Feeding data and FA levels were collected on infants with birthweight of 1000 grams or less born in 2021. Total volumes of human milk and human derived fortifiers and cream were recorded daily for each infant. Infants received their mother's or donor milk. Milk was fortified with human derived fortifier to 24 cal/oz at 40mL/kg/day, to 26cal/oz at 60mL/kg/day, with 4mL human derived cream added per 100mL. FA intakes were then calculated using known levels in the donor milk and fortifiers, and reported as mg/infant/day. FA panels were analyzed at DOL 0-3, 7, first day of full feeding volume, and DOL 30 as µmol/L.

Results: 27 Infants were included, with mean birthweight of 773 grams and gestational age 26 weeks and 3 days; 26.9% were small for gestational age. Full feeds were reached at an average of 14 days. Levels of enteral fatty FA intake and

serum levels are reported in Table 1. DHA did not decline until after the first week of life and by 30 days had returned to birth levels.

Conclusion: Many studies have described decreased morbidities with an of EHMD, and essential FA intakes have also been tied to outcomes of extremely premature infants. Levels of DHA and ARA in our sample experienced less of a decline than has been previously reported. Early fortification with an EHMD may provide more optimal essential fatty FA intake and prevent significant deficits in these highest risk infants.

Table 1: Fatty Acid Intakes and Serum Levels

Average Daily Enteral Fatty Acid Intake (mg/infant/day)				
Fatty Acid	DOL 0-3	DOL 4-7	DOL 8-Full Feeds	Full Feeds-DOL 30
DHA	1.359	11.734	22.254	45.789
ARA	3.881	32.52	61.182	125.204
LA	164.044	1348.177	2519.444	5147.947
ALA	15.511	113.365	211.764	432.823
EPA	0.615	4.849	9.13	18.759
Serum Levels at Completion of Time Period (μmol/l)**				
DHA	139.8 ± 51.8*** median=135.1 n=18	155.4 ± 54.9 median=145.4 n=14	115.9 ± 33.2 median=114.9 n=12	140.1 ± 50.6 median=134.9 n=8
ARA	562.1 ± 182.4 median=527.0 n=18	532.1 ± 193.5 median=489.5 n=14	529.2 ± 160.0 median=494.6 n=12	542.9 ± 224.5 median=517.2 n=8
LA	1004.3 ± 463.1 median=962.7 n=18	1682.2 ± 677.9 median=1600.2 n=14	1951.6 ± 762.6 median=1924.1 n=12	1927.9 ± 718.4 median=1838.7 n=8
ALA	41.3 ± 24.9* median=38.3 n=16	51.1 ± 24.4 median=47.1 n=14	46.0 ± 20.1 median=40.6 n=12	52.9 ± 27.7 median=49.1 n=8
EPA	62.8 ± 42.3 median=52.1 n=17	72.9 ± 44.6 median=62.4 n=14	54.0 ± 7.7 median=51.6 n=12	56.0 ± 46.3 median=42.3 n=8

DHA= docosahexaenoic acid, ARA=arachidonic acid, LA=linoleic acid, ALA=α-linoleic acid, EPA=eicosapentanoic acid.
*Total intake for specified time period averaged per day
**Levels measured at DOL 0-4, DOL 7, when reached full feeding volume, and DOL 30
*** Mean ±SD

Fatty Acid Intake and Serum Levels

Fatty Acid Intake and Serum Levels

Dr. Ferry is on the speaker's bureau for Prolacta Bioscience and Abbott Nutrition. Martin Lee, PhD is employed by Prolacta Bioscience and provided statistical analysis

ID 674. Impact of variations in macronutrients in breast milk and associated factors

Doctor Maria Lithoxopoulou[1], Mrs Anastasia Karagiozi[2], Mrs Eleni Kalini[2], Mrs Eftychia Drogouti[2], Mrs Evgenia Babatseva[2], Professor Christos Tsakalidis[1], Professor Elisavet Diamanti[1]

[1]Aristotle University Of Thessaloniki, Thessaloniki, Greece, [2]Hospital Papageorgiou , Thessaloniki, Greece

Primary aim in nourishing preterm infants is to attain growth rates comparable to growth rates of fetus of similar gestational age.
Adequacy of macronutrients and energy is necessary for nutrition and growth. Undernutrition and postnatal growth failure have been associated with neurodevelopmental impairment.

Objective: Study of effect of maternal and neonatal factors on macronutrients and energy value of breast milk.
Material and Method: Mothers milk of 59 preterm (24–36 weeks) and 58 full–term infants (37–41 weeks) of Human Milk Bank were analyzed, from May 2019 to November 2022. Demographic characteristics such as maternal age, (mean age 33.36 years), maternal body weight, body mass index, type of delivery, birth weight, (mean birth weight 2,383 g) and gestational age (mean age gestation 34.2 weeks). The day of lactation (colostrum, mature milk) was also recorded. Macronutrient analysis was done with mid–infrared (mid–IR) transmission spectroscopy (MIRIS, Sweden) analyzer. A total of 117 fresh and frozen milk samples were analyzed. SPSS 28, Statistics was used.

Results: Mothers' milk in more premature infant has higher amount of fat (p=0.018), protein (p=0.011) and energy (p=0.016) (statistically significant difference). It was

observed that fat and energy was lower in colostrum (p=0.029) and higher in mature milk(p=0.017) (statistically significant difference). Mothers milk of term infants does not show statistically significant decrease in protein (p=0 ,12) during lactation and correspondingly preterm mother's milk does not show statistically significant decrease in protein (p=0.33) during transition from colostrum to mature milk.
Milk of mothers with higher BMI (>25 kg/m2) has not statistically significant difference in macronutrients (fat, (p=0.6) proteins, (p=0.12) carbohydrates (p=0.78) than mothers' milk with low BMI (⩽25 kg/m2). Maternal age did not seem to affect content of macronutrients such as fat (p=0.27), protein (p=0.2), and carbohydrates (p=0.76) (non–statistically significant difference).

Conclusions: Prematurity and time of lactation are factors that have significant effect on macronutrients. Previous published studies are similar to our results. Maternal age and high BMI during pregnancy have no statistically significant effect on milk macronutrients and energy. Analysis of macronutrients is necessary since nutrition of premature infants should be targeted fortified as macronutrients differ from experts' recommendations.

None declared

ID 881. Preterm human milk analyses confirms that all components change within four weeks of life.

Doctor Anna Chmielewska[2], **Doctor Joanna Seliga-Siwecka**[1]
[1]Medical University Of Warsaw, Warsaw, Poland, [2]Umeå University, Umea, Sweden

Aims: To analyse preterm content of human milk collected as part of a randomised controlled trial assessing tailored nutrition.

Methods: We studied 726 samples from 39 mothers of premature infants during their first postnatal 4 weeks. Infants were assigned to standard or tailored enteral nutrition, but ALL mothers were asked to pool milk samples from full breast expression at each feed across a 24 h period twice a week. Glucose, fat, protein, and energy levels were measured using the MIRIS human milk analyzer and compared to published values. We assessed the relationship between postnatal week and human milk content.
Results: Protein content decreased over time. Median protein at 4 weeks of postnatal age was 1.37 and 1.32 per 100 ml (tailored vs standard group). Lipid content increased over time. Median lipid content at 4 weeks of postnatal age was 4.06 and 3.82 per 100 ml, (tailored vs standard group). Glucose remained stable. Energy content increased over time only in the tailored group. Median energy at 4 weeks of postnatal age was 73.35 per 100 ml.

Conclusions: Variations in human milk content exist between populations and should be considered when prescribing nutrition in preterm infants.

none declared

ID 203. IMPACT OF DONOR HUMAN MILK SERVICE IMPLEMENTATION ON THE NEONATAL INTENSIVE CARE UNIT ON BREASTMILK AT DISCHARGE RATES FOR BABIES BORN UNDER 34 WEEKS GESTATION

Mrs Francesca Brewer[1], Mrs Corrina Proctor[1], Dr Jessica McCrindle[1], Dr Rashda Abbas[1], Dr Arthi Lakshmanan[1]

[1]Neonatal Intensive Care Unit, University Hospitals Of Coventry And Warwickshire, Coventry, United Kingdom

Background

Mother's own milk (MOM) is the optimal form of feeding for preterm infants, however the ability of mothers to provide adequate milk volumes can be affected by separation, stress, illness, pump dependency and immature mammary secretory cells in the first two weeks following delivery. Donor Human Milk (DHM) is recommended as the next best option.

Aim

To identify whether DHM use improves breastmilk at discharge rates for babies born at <34 weeks gestation in the Neonatal Intensive Care Unit (NICU).

Methods

A DHM guideline was introduced in March 2022 for when there is insufficient MOM. Babies were eligible if they were <32 weeks gestation or <1500g, and to consider use for babies 32–34 weeks gestation if at high risk of necrotizing enterocolitis (NEC). Buccal maternal colostrum was always given as soon as possible as per ongoing policy. Probiotics and rest of the enteral feeding guidelines remained the same. The DHM guideline was available to trust staff electronically, and a patient information leaflet was designed for parents.

Training was provided to medical and nursing staff on induction.
Data was collected on breastmilk at discharge throughout from 1st March 2021 to 28th February 2023 from the Badgernet database.

Results

The latest data collection from the National Neonatal Audit Project (NNAP) shows an improvement in breastmilk at discharge rates from 75% before DHM implementation to 86% post DHM implementation (fig1). The national average for 2021 was 60.6% (NNAP 2021 report) An increase in breastmilk on day 2 (48.3% to 53%) has also been noted.

A total of 12% of eligible babies have received DHM since its implementation on NICU.

Conclusion

The introduction of DHM contributed to the improved breastmilk at discharge rates in our unit, along with improved breastmilk administration rates on day 2. This is in keeping with previous literature that usage of DHM increases overall breastfeeding rates.

Ongoing work to sustain this improvement includes ensuring appropriate use of DHM as per trust guidance and staff education on DHM benefits.

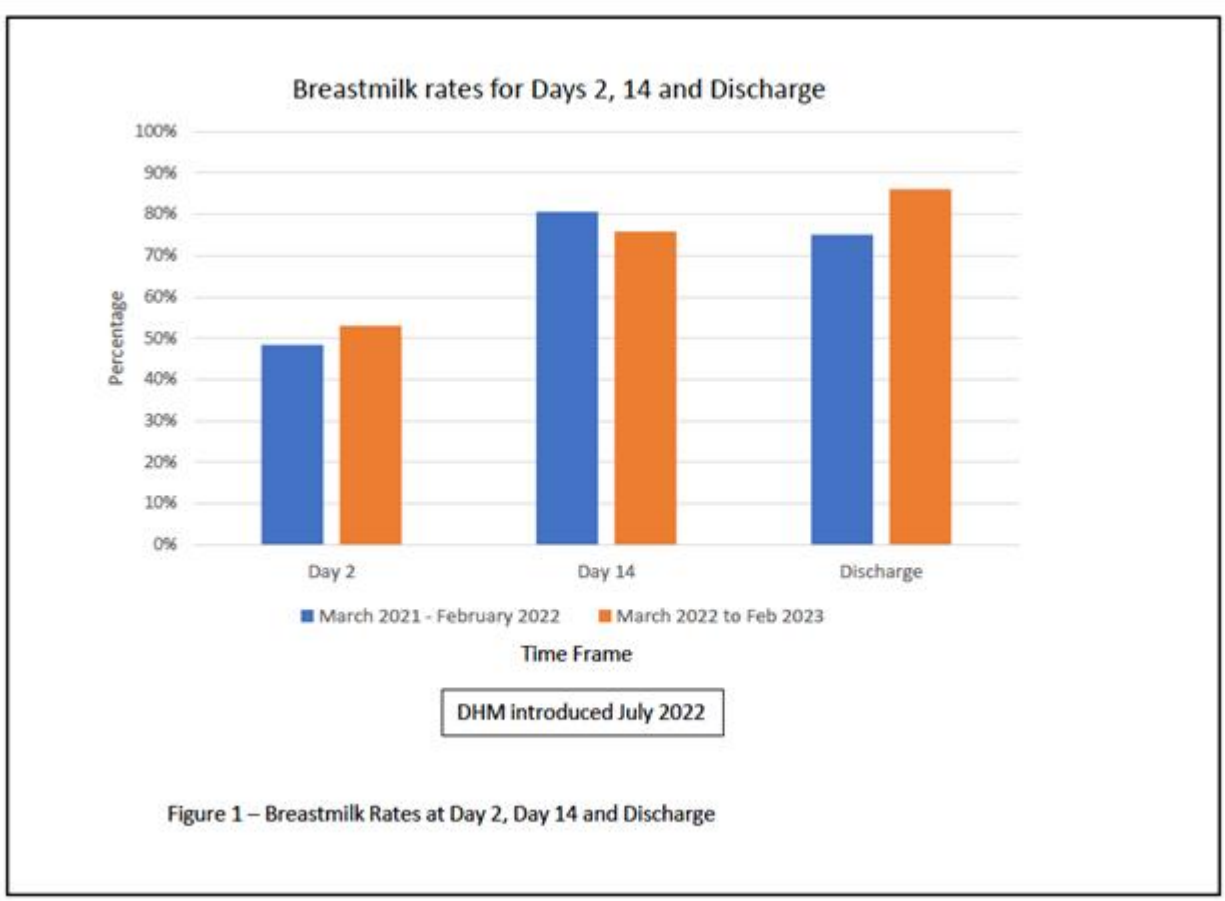


Figure 1 – Breastmilk Rates at Day 2, Day 14 and Discharge

None declared

ID 426. NEONATAL OUTCOMES FOLLOWING INTRODUCTION OF ROUTINE PROBIOTIC SUPPLEMENTATION TO VERY PRETERM INFANTS.

Dr. David B. Healy[1,2,3], Mr Benjamin Campbell–Green[2], Dr. Vicki Livingstone[2,3], Prof. C. Anthony Ryan[2], Prof. R. Paul Ross[1], Prof Catherine Stanton[1,4], Prof Eugene M. Dempsey[1,2,3]

[1]APC Microbiome Ireland, University College Cork, Cork, Ireland, [2]Department of Paediatrics and Child Health, University College Cork, Cork, Ireland, [3]INFANT Research Centre, University College Cork, Cork, Ireland, [4]Teagasc Food Research Centre, Moorepark, Cork, Ireland

Background:

Neonatal probiotic supplementation remains contentious. Benefit may be restricted to supplementation with particular bacterial strains. We present data from infants born at Cork University Maternity Hospital, Ireland, supplemented with Bifidobacterium bifidum and Lactobacillus acidophilus (Infloran®).

Methods:

A retrospective study of infants <32 weeks gestation and <1500g surviving beyond 72 hours of life was performed. Two 6–year epochs; pre–probiotics (Epoch 1: 2008–2013) and with probiotics (Epoch 2: 2015–2020), were evaluated. The primary outcome was defined as death after 72 hours or NEC Bell stage 2a or greater.

Results:

Seven–hundred–and–forty–four infants were included (Epoch 1: 391, Epoch 2: 353). The primary outcome occurred in 67 infants (Epoch 1: 37, Epoch 2: 30, p=.646)). After adjustment, the difference was significant ((OR(95% CI): 0.53 (0.29 to 0.97),

p=.038). Differences between epochs did not depend on gestational age group (< 28 weeks; ⩾ 28 weeks).

Discussion:

Routine administration of a B. bifidum and L. acidophilus probiotic at our institution was associated with reduction in severe grade NEC and/or Death after adjustment for confounding variables.

Table 1. Results of binary logistic regression analyses comparing the primary and secondary outcomes between epochs and within gestational age groups above and below 28 weeks

	Epoch 1 *(n=391)*	Epoch 2 *(n=353)*	Unadjusted analysis			Adjusted analysis[2]		
	%(n)	%(n)	OR (95% CI)	P-value	P-value[1]	OR (95% CI)	P-value	P-value[1]
Combined outcome	9.5(37)	8.5(30)	0.89 (0.54-1.47)	0.646	0.208	0.53 (0.29-0.97)	0.038	0.465
Mortality	5.9(23)	5.1(18)	0.86 (0.46-1.62)	0.64	0.818	0.51 (0.24-1.08)	0.08	0.918
Necrotising enterocolitis	5.4(21)	4.8(17)	0.89 (0.46-1.72)	0.731	0.464	0.63 (0.30-1.31)	0.216	0.709
Late-onset sepsis	31(121)	18.1(64)	0.49 (0.35-0.70)	<.001	0.109	0.35 (0.24-0.52)	<.001	0.351

[1] P-value for gestational age grouping above and below 28 weeks, interaction term is epoch*gestational age group

[2] adjusted for birthweight and postnatal steroid use

Results of binary logistic regression analyses comparing the primary and secondary outcomes between epochs and within gestational age groups above and below 28 weeks

Results of binary logistic regression analyses comparing the primary and secondary outcomes between epochs and within gestational age groups above and below 28 weeks

None declared

ID 431. REVIEW OF MECONIUM OBSTRUCTION OF PREMATURITY IN A TERTIARY CARE CENTER

MISS ANA ISABEL ARMENTEROS LOPEZ, MISS MAR MARTIN, MISS ESTHER AGUILERA RODRIGUEZ, **Miss TAMARA PAVON LOPEZ**[1], MISS ANA MARIA GIL FENOY, MISS MARINA DE LA VEGA DE CARRANZA
[1]Torrecardenas' Hospital, ALMERIA, Spain

Background

Preterm infants less than 32 weeks and/or 1500 grams frequently present meconium obstruction of prematurity (MOP), defined as delayed meconium elimination, need for repeated rectal stimulation and/or delay between the first and second bowel movement. Its incidence has increased because of higher survival of these patients.

Methods

Compare patients diagnosed of MOP with healthy patients, analyze the influence of risk factors and the influence of treatments on bowel perforation.
Preterm infants under 32 weeks and/or 1500g admitted to the neonatal unit of a tertiary hospital over one-year period were included. We collected demographic, clinical and therapeutic variables. Descriptive and bivariate analysis was performed.

Results

A total of 52 patients met criteria for inclusion (65.4% male). Mean gestational age was 29+/-2.53 weeks, weight 1189.81+/-320.815g. Risk factors were: antenatal magnesium sulphate 75%; maternal pre-eclampsia 23.1%; intrauterine growth retardation 28.8%; small for gestational age 28.8%.
34 affected by MOP (65.4%). Statistically significant differences in mean gestational age (28.71 versus 30.31 weeks; p=0.038) and mean weight (1102.65g versus 1354g; p=0.004) were found between the two groups. Differences close to statistical

significance in prenatal magnesium sulphate exposure (82.4% versus 61.1%; p=0.09) were shown.
Statistically significant differences were found in time to reach full enteral nutrition (19.45 versus 7.81 days; p=0.002) and spontaneous bowel movements (11.16 versus 2.5 days; p<0.001). There was higher rate of late sepsis in MOP patients (38.2% versus 5.6%; p=0.01).
There was no higher incidence of intestinal perforation in patients with MOP. There was no statistically significant association between bowel perforation and use of saline or N–acetylcysteine therapeutic enemas.

Conclusion

The main risk factors for the development of MOP are gestational age and low birth weight. Treatment of MOP with enemas is effective and safe and is not associated with complications such as bowel perforation.

None declared