September 23rd, 2023 08:00 - 09:00

POSTER WALK – NUTRITION 4

ID 227. Choline Deficiency in Parenteral Nutrition

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Background: Choline is an essential nutrient, with high concentrations in parenchyma in the form of membrane phosphatidylcholine (PC) and sphingomyelin (SM). Most choline is of exogenous origin, as hepatic synthesis is insufficient and requirements are proportional to growth rate. After preterm delivery, plasma choline untimely drops to 50% of intrauterine values, as breast milk and formula contain little choline. During total parenteral nutrition (TPN) plasma choline further decreases, due to lack of free choline. As daily choline/PC turnover via bile and very low density lipoproteins accounts for more than 50% of its hepatic pool size, adequate choline supply is key to liver homeostasis. Hence, choline deficiency may contribute to intestinal failure–associated liver disease (IFALD) in patients receiving TPN.

Methods: We performed a literature search using the terms >choline< and >parenteral nutrition< in Pubmed. This search revealed in 84 items, which were selected according to relevance.

Results: Selection revealed 45 publications, comprising one letter to The Lancet (1980), 8 preclinical studies (1985–2020), 13 reviews (1985–2019), 14 observational (1985–2021) and 2 uncontrolled studies (2006,2011), 4 double–blind randomized

prospective trials (1990–2001) and 3 guidelines (2012–2022). The letter pointed to the clinical problem of choline deficiency in TPN. Preclinical studies showed protection from IFALD, steatosis and cholestasis in animal models, whereas observational studies demonstrated low plasma choline concentrations in preterm infants and TPN patients of various ages. Reviews accentuated the requirement of choline for normal development and its supplementation to protect from steatosis, cholestasis and other forms of IFALD, but only the American Society of Parenteral and Enteral Nutrition (A.S.P.E.N.) accentuated the necessity of choline addition to parenteral nutrition regimens. Randomized prospective trials showed an association of choline–poor TPN regimens with IFALD, and its reversibility by choline supplementation. However, no large–scale trial including pediatric patients on TPN has yet been performed, although their choline deficiency is documented.

Conclusion: IFALD due to choline deficiency is well documented in TPN patients. However, in contrast to recommendations by A.S.P.E.N., choline is not provided in TPN and the need for a choline supplement has not been addressed. Large–scale clinical trials in pediatric TPN patients are urgently required.

None declared

ID 329. Duration of Parenteral Nutrition and Risk for Retinopathy of Prematurity – Development and Validation of the Revised DIGIROP Clinical Decision Support Tool

Doctor Aldina Pivodic[1], Prof Gerd Holmström[2], Prof Lois E.H. Smith[3], Dr Anna-Lena Hård[1], Ass Prof Chatarina Löfqvist[1,4], Dr Abbas Al-Hawasi[5], Dr Eva Larsson[2], Ass Prof Pia Lundgren[1], Dr Lotta Gränse[6], Dr Kristina Tornqvist[6], Dr Agneta Wallin[7], Dr Helena Johansson[8,9], Prof Kerstin Albertsson-Wikland[10], Prof Staffan Nilsson[11], Prof Ann Hellström[1]

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BACKGROUND: The prognostic impact of parenteral nutrition duration (PND) on retinopathy of prematurity (ROP), is not well studied. Safe prediction models can help optimize ROP screening by effectively discriminating high- from low-risk infants. The aim of this study was to demonstrate the prognostic value of PND on any ROP and

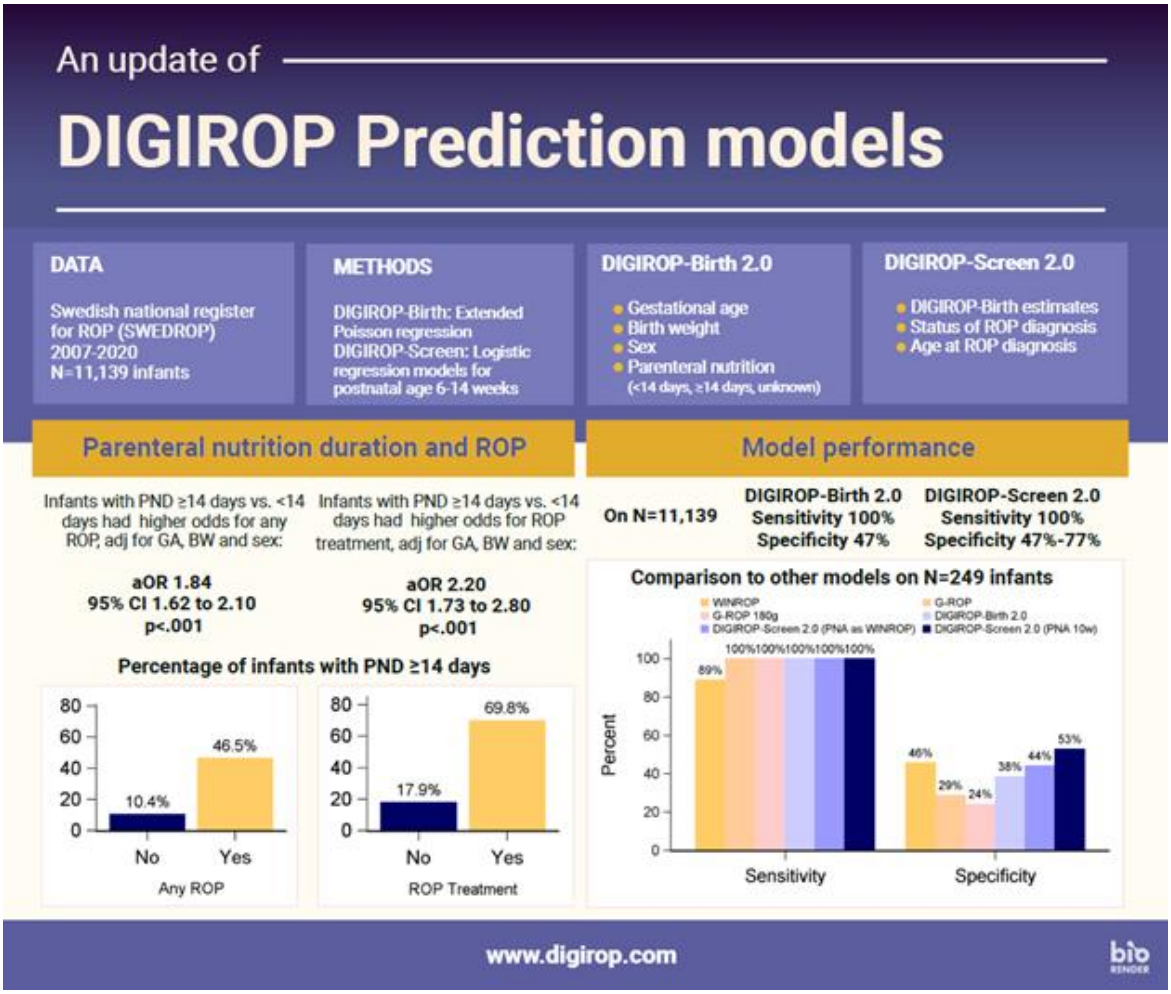
ROP treatment. Further, it was to update and validate DIGIROP–Birth and DIGIROP–Screen 2.0 prediction models to include all ROP–screened infants regardless of gestational age (GA) and incorporate PND. To compare DIGIROP with WINROP and G–ROP.

METHODS: This was a retrospective study of 11,139 prematurely born infants (SWEDROP 2007–2020). Extended Poisson and logistic models were applied. ROP treatment was the outcome in DIGIROP models. Sensitivity, specificity, AUC, adjusted OR (aOR) with 95% CI were the main measures. Internal and external validations were performed.

RESULTS: ROP developed in 29% and treatment was given in 5%, 65% had PND <14 days, 21% ⩾14 days, and 14% unknown. PND was significantly correlated to ROP severity, rs=0.45, p<0.0001. Infants with ⩾14 days PND vs. <14 days had faster progression from any ROP to ROP treatment, adjusted mean difference −0.9 (95% CI −1.5 to −0.3) weeks, p=0.0037. Infants with PND ⩾14 days vs. <14 days had higher odds for any ROP, aOR 1.84 (95% CI 1.62 to 2.10), p<0.0001, and for severe ROP requiring treatment, aOR 2.20 (95% CI 1.73 to 2.80), p<0.0001. Among all 11,139 infants, DIGIROP 2.0 models had 100% sensitivity (95% CI for DIGIROP–Birth 99.4% to 100%). The specificity was 46.6% (95% CI 45.6% to 47.5%) at birth and 76.9% (95% CI 76.1% to 77.7%) during screening. G–ROP, DIGIROP–Birth, and DIGIROP–Screen 2.0 showed 100% sensitivity on a validation subset, WINROP 89%. Specificity for each prediction model was: 29% G–ROP, 38% DIGIROP–Birth, 53% DIGIROP–Screen at 10 weeks, and 46% WINROP.

CONCLUSIONS: Based on >11,000 ROP–screened infants born in Sweden, PND of ⩾14 days corresponds to a significantly higher risk of having any ROP and receiving

ROP treatment. The updated DIGIROP 2.0 models are safe, effective, and superior to WINROP or G–ROP with 100% sensitivity and high specificity.



Relation between parenteral nutrition duration and ROP, and model performance of the decision support tool obtained from the updated DIGIROP 2.0 models.
Relation between parenteral nutrition duration and ROP, and model performance of the decision support tool obtained from the updated DIGIROP 2.0 models.

None declared

ID 384. Early parenteral nutrition improves growth in infants with very low birth weight: A causal inference study

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Background: Besides enteral nutrition, parenteral nutrition (PN) is required to provide sufficient nutrient and energy for preterm infants. Studies have suggested that initiation of PN early after birth is beneficial for body growth but could lead to increased morbidity. In this study, the Neomune–NeoNutriNet cohort containing data of infants with very low birth weight (VLBW) from 13 hospitals from five continents was employed to investigate the impact of early initiation of PN.

Methods: Using this cohort, the effect of PN initiated within the first day of life (early PN) and within day 2–5 (delayed PN) was compared in a causal inference approach. Based on subject knowledge, a set of confounders were selected for a priori model specification for different analyses, assisted by directed acyclic graph (DAG). The primary outcome, Δbody weight Z–scores from birth to postmenstrual age (PMA) 36 weeks (ΔBW Z–scores PMA36), was analysed by linear regression with propensity score–based weighting. Secondary outcomes included ΔBW Z–scores between birth and week 1 and 4 of life (ΔBW Z–scores CA1 and CA4), growth velocities (GV CA1, CA4 and PMA36), time to regain birth weight (TRBW), mortality and incidence of necrotising enterocolitis (NEC) and days of antibiotic treatments during admission.

Results: A total of 2,151 infants from the cohort were included. A significant improving effect of early PN was found on ΔBW Z–scores PMA36 (0.16, 95% confidence interval (CI) 0.08 – 0.23, P < 0.001), ΔBW Z–scores CA1 and ΔBW Z–scores CA4, and GV PMA36 and GV CA4, and TRBW (all P < 0.01). No significant competing risk for the infants reaching PMA 36 weeks was observed (P > 0.05). No significant effect of early PN on mortality (odds ratio (OR) 1.30, 95% CI 0.69 – 2.45, P = 0.41), incidence of NEC (OR 1.06, 95% CI 0.63 – 1.80, P = 0.84) or days of antibiotic use (β –0.80, 95% CI –1.89 — 0.29, P = 0.15) was found.

Conclusion: For VLBW infants, PN can be initiated in the first day of life to support in–hospital growth without affecting mortality, incidence of NEC or antibiotic use.

None declared.

ID 150. Extended minimal enteral feeding and time to regain birth weight in extremely low-birth-weight infants

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BACKGROUND: Minimal enteral feeding after birth has been developed as a strategy to enhance the functional maturation
of the gastrointestinal tract. This study aimed to examine the relationship between the duration of minimal enteral feeding and time to regain birth weight in extremely low–birth–weight infants.

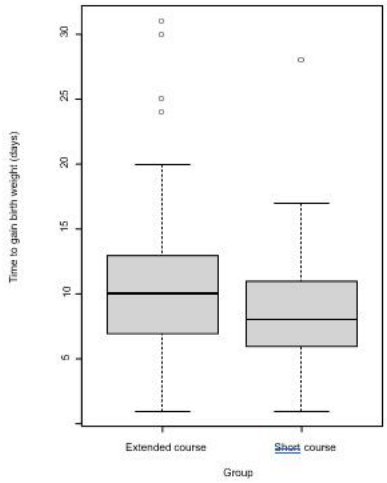
METHODS: This retrospective study included all extremely low–birth–weight infants born between January 2018 and
December 2020. Infants with major congenital anomalies and conditions requiring surgery and those who died or received palliative care in the first 10 days of life were excluded from the analysis. Minimal enteral feeding courses were categorized as extended if the feeding was continued for > 72 hours and short if the feeding was < 72 hours. The primary measured outcome was the time taken to regain birth weight.

RESULTS: Of 217 study infants, 180 received an extended minimal enteral feeding for > 72 h. The median time to regain birth weight was not significantly different between the extended and short minimal enteral feeding groups, median (IQR) was 10 (7—13) versus 8 (6—11), respectively (p = 0.15). Extended minimal enteral feeding is associated with a significant
increase in the mean duration of the total parenteral nutrition, (21.3 ± 10 versus 17.2 ± 9.3 days; p = 0.021). Infants with prolonged minimal enteral feeding courses

experienced non-significantly higher levels of necrotizing enterocolitis, late-onset sepsis, and retinopathy of prematurity.

CONCLUSIONS: Extended minimal enteral feeding in extremely low-birth-weight infants may not affect the time taken to regain birth weight.

Keywords: Intraventricular hemorrhage, minimal enteral feeding, necrotizing enterocolitis, preterm infants, retinopathy of prematurity, time to full feed, time to regain birth weight



. MEF course comparison. The time to regain birth weight was similar between those who received an extended MEF and those who did not

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None declared

ID 981. Risk factors and neonatal outcomes of severe feeding intolerance in extremely preterm infants.

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Background

Feeding intolerance (FI) is common in the extremely preterm (EPT) infant. Some of these infants have severe FI, leading to a prolonged dependency on parenteral nutrition, risk of suboptimal nutrient intakes and increased risk of adverse outcomes. It is unclear why some EPT infants develop severe FI, and the aims of this study was to identify risk factors as well as outcomes of severe FI.

Methods

The cohort included 229 infants born before 28 gestational weeks from five level three NICUS in Sweden between 2019 and 2021. Severe FI was defined as not reaching 50% enteral feeds of total fluid volume for fourteen days or more before the

infant reached 34 weeks of gestational age. Infants were excluded (n=28) if they received an NEC diagnosis, underwent abdominal surgery or died before 28 days of age. To assess postnatal risk factors and outcomes, infants with severe FI were matched 1:2 to controls with a propensity score based on nine perinatal variables.

Results

Of the 201 EPT infants, 27 (10.4%) fulfilled the criteria for severe FI. Compared with the rest of the cohort (n=174), infants with severe FI had lower gestational age at birth (24wk+6d vs 25wk+6d wk, p<0.001), lower birth weight (649g vs 842g, p<0.001), and lower Apgar score at 10 min (7p vs 8p, p=0.002), see Table 1. There was no gender difference. We identified 54 matched control infants. Severe FI–cases vs controls had more days with a central venous catheter (median=37d vs 15d, p=0.01) and days with antibiotics (median=27d vs 16d, p=0.001), but there was no significant increase in culture verified sepsis.

Conclusion

Low birthweight and gestational age were risk factors for severe FI. Severe FI was associated with more prolonged use of central venous catheters and antibiotics.

Table 1. Feeding Intolerance vs No Feeding Intolerance

Characteristic	Feeding Intolerance, N = 27	No Feeding Intolerance, N = 174	p-value[1]
Birth weight (grams), Mean (SD)	649 (169)	842 (194)	**<0.001**
Birth weight, z-score, Mean (SD)	-1.40 (1.50)	-0.79 (1.15)	0.051
Male, n (%)	13 (48%)	96 (55%)	0.5
Gestational Age, days, Mean (SD)	174 (8)	181 (11)	**<0.001**
10 Minute APGAR, Median (IQR)	7.00 (1.50)	8.00 (3.00)	**0.002**
Cesarean delivery, n (%)	16 (59%)	105 (60%)	>0.9
Rupture before contractions started, n (%)	6 (22%)	54 (31%)	0.4
Mother diagnosed with chorioamnionitis, n (%)	2 (7.4%)	38 (22%)	0.081
Treated with antenatal antibiotics, n (%)	13 (48%)	118 (68%)	**0.046**

[1] Welch Two Sample t-test; Pearson's Chi-squared test; Wilcoxon rank sum test
FI=Feeding Intolerance *Days before 34 gestational weeks

Table 1. Feeding Intolerance vs No Feeding Intolerance

Table 1. Feeding Intolerance vs No Feeding Intolerance

None declared

ID 340. MOLECULAR CHARACTERIZATION OF ESBL-ESCHERICHIA COLI ISOLATES FROM PRETERM INFANTS IN AN OUTBREAK OF NECROTIZING ENTEROCOLITIS

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Background

Role of specific pathogens and resistance/virulence factors are poorly described in necrotizing enterocolitis (NEC). Escherichia coli has become a predominant pathogen in preterm neonates.

Methods

We report an outbreak of extended–spectrum beta–lactamase–producing (ESBL) E. coli causing severe NEC in a level III NICU. We collected clinical data from electronic medical records. For multidrug–resistant organism (MDRO) screening, systematic rectal swabs were analyzed by standard MALDI–TOF–MS and antimicrobial susceptibility testing. Phenotypic ESBL confirmation was performed according to EUCAST algorithm. For perioperative digestive samples (PODS), whole–genome sequencing (WGS) was performed for serotyping, virulence–associated gene and antimicrobial resistance profiling. Hierarchical clustering of core genome multilocus

sequence typing (cgMLST) was performed using EnteroBase (https://enterobase.warwick.ac.uk).

Results

From September to October 2022, six infants were colonised by an ESBL–E. coli strain. Within 1–36 days following detection, four presented with Bell stage IIIb NEC. One infant died from redirection of care and three underwent extensive intestinal resection resulting in short gut syndrome. After implementing extra infection control measures, no additional transmission of the strain was detected. PODS isolates showed presence of ESBL–E. coli with a similar phenotypic resistance profile. WGS revealed an extra–intestinal pathogenic (EXPEC), urinary pathogenic E. coli (UPEC) characterized by an O6:H1 serotype, harboring multiple virulence factors, including K5 capsular antigen and papA uropathogenic fimbriae (P–fimbriae). In addition, the strain expressed the bla CTX–M–15 ESBL conferring resistance to most cephalosporins and monobactams, and the gyrA (Ser83Leu) mutation linked to fluoroquinolone resistance in E. coli. All genome isolates were closely related and belonged to cluster HC5_220417.

Conclusion

This outbreak of unusually severe NEC was caused by an E. coli strain with unique virulence and resistance factors that may account for the pathogenicity observed. Published metagenomic data have shown an association of NEC with UPEC colonization. P–fimbriae are established toll–like receptor 4 (TLR4) stimulants, and genomes encoding fimbriae proteins have been significantly associated with NEC. Excessive TLR4 expression in preterm intestinal mucosa triggering uncontrolled immune responses is a key mechanism in NEC pathogenesis. Bacterial molecular profiling may improve infection control measures and antimicrobial therapy in affected infants.

	Patient 1	Patient 2	Patient 3	Patient 4	Patient 5	Patient 6
Gestational age	24+1/7 (twin A)	24+1/7 (twin B)	29+3/7	34+6/7	24+0/7	23+6/7
Age at ESBL E. coli positivity	No sample	Day 5	Day 5	Day 24	Day 55	Day 6
Age at NEC onset	Day 12	Day 41	Day 9	Day 24	No NEC	No NEC
NEC outcome	Near-complete gut necrosis Redirection of care	Extended jejunum + ileum resection Short gut syndrome	Extended ileum + colon resection Short gut syndrome	Extended ileum + colon resection Short gut syndrome		
Per-operative digestive samples	ESBL urinary pathogenic *Escherichia coli* (UPEC) O6:H1					
Virulence genes harbored	Adherence : *hra, iha, irp2, focCsfaE, papA_fteA_F10, papA_F19, papC, sfaD, yfcV* Invasion : *ompT* Iron uptake : *ireA, sitA, chuA, fyuA, iucC, iutA* Proteases : *gad, pic, sat, vat* Regulation : *terC* Secretion system : *kpsMII_K5, kpsE* Stress protein : *usp* Survival : *iss* Toxin : *clbB, cnf1, hlyA, tcpC*					
Resistance genes harbored	$bla_{CTX\text{-}M\text{-}15}$ – extended spectrum beta-lactamase					
Resistance gene variants	*gyrA* (Ser83Leu) – quinolone resistance					

Patients' demographics and clinical course and the whole–genome sequencing–based virulence–associated gene profiles and antimicrobial resistance profiles for all E. coli isolates included in our study

Patients' demographics and clinical course and the whole–genome sequencing–based virulence–associated gene profiles and antimicrobial resistance profiles for all E. coli isolates included in our study

None declare

ID 460. Risk of admission and length of stay by gestational age for infants born to mothers with pregestational and gestational diabetes: an evidence-based approach to counselling

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Background

There is an increasing prevalence of pregestational and gestational diabetes (GDM) in pregnancy. Early diagnosis and strict glucose control in the antenatal period reduces maternal and neonatal complications. An admission rate of 8–10% of neonates born to mothers with GDM is reported in the literature. Hypoglycaemia and respiratory distress are the most common indication for admission, leading to an increased length of hospital stay. Little data exists on gestation specific neonatal outcomes, dependent on the type of maternal diabetes and treatment, which would aid prenatal counselling in relation to likelihood and duration of admission.

Our aim is to define neonatal outcomes including admission rate to the NICU by gestational age for neonates born to mothers with pregestational and GDM. This information will provide up–to–date, local data to support health care professionals when counselling patients with diabetes in pregnancy

Aim

A retrospective observational study identified 192 infants born to mothers with pregestational or gestational diabetes requiring admission to an Irish tertiary NICU from Jan — Dec 2018. Infants were identified using Hospital In–Patient Enquiry(HIPE). Gestational age, birth weight, mode of delivery, APGARs, reason for admission, length of stay, need for respiratory and fluid support , hypoglycaemia and mortality were

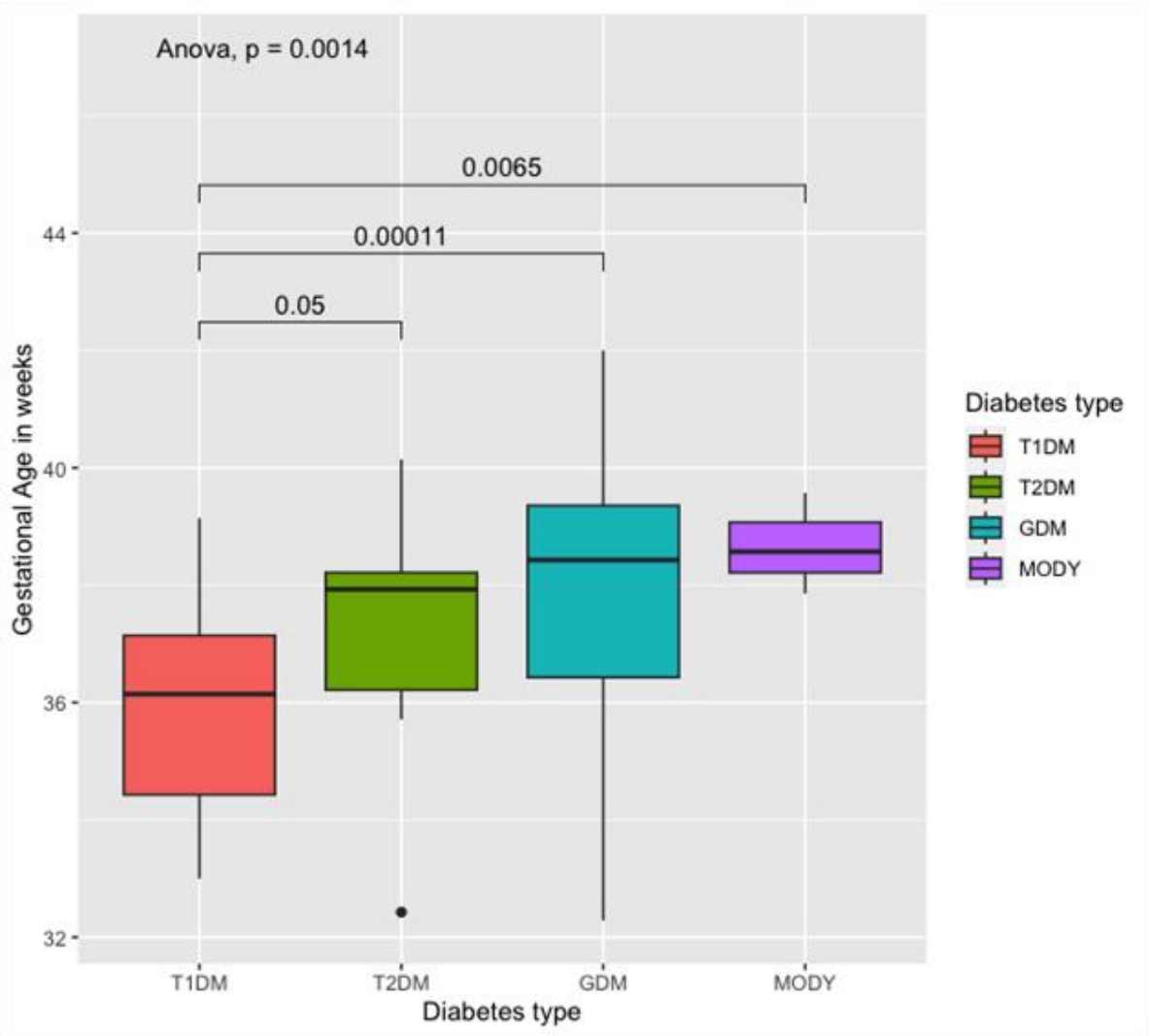
collected. Maternal factors accounted for included age, smoking, high BMI, pre-eclampsia/pregnancy-induced hypertension, and use of antenatal steroids.

Results

The statistical test used was ANOVA. There was no significant difference in birth weight between the groups (p=0.61). However, infants of mothers with T1DM were born earlier than those with GDM or MODY, but not with T2DM(Fig.1). The most common indication for admission was respiratory distress, followed by hypoglycaemia, feeding issues and jaundice. There was no significant difference in length of NICU stay (p=0.16).

Conclusion

Infants of mothers with T1DM are born significantly earlier than those with GDM or MODY, but not T2DM. Despite being born earlier, these infants have a similar birth weight to their peers.



ANOVA analysis comparing the gestational ages at which infants are born in mothers with T1DM,T2M,GDM and MODY

ANOVA analysis comparing the gestational ages at which infants are born in mothers with T1DM,T2M,GDM and MODY

None declared

ID 377. EARLY DISCHARGE WITH DIGITAL FOLLOW UP IS SAFE IN PRETERM INFANTS - AN EVALUATION STUDY

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[1]Department of Paediatric and Adolescent Medicine, Drammen Hospital, Vestre Viken , Drammen, Norway

Background: Preterm infants are hospitalized for weeks or months due to treatment and care. The recent years, use of early discharge programs has increased. Medical stable preterm infants with feeding tubes are discharged to home with support from the neonatal intensive care units. Several units have begun to use digital follow–up for these early discharge programs. This study aimed to evaluate if a digital home care program for preterm infants in terms of efficacy and safety.

Method: A digital home care program (DigiHopp) was proposed to parents with stable preterm infants in a category 3a neonatal intensive care unit with single–family rooms in Norway. Dedicated nurses conducted video consultations with the families three times per week. Prospective data from electronic charts and parent questionnaires were collected from April 2021 to March 2023. Evaluated outcomes were safety, growth, breastfeeding rates, and parents' satisfaction.

Results: The study included 59 preterm infants and their parents, 36 mothers and 17 fathers. The infants were discharged at a median of 35+5 (34+0–41+1) weeks postmenstrual age. In Digihopp, the median length of stay was 13 days (2–34). There were no reports of adverse events or readmissions related to tube feeding or growth failure. Their growth velocity was considered sufficient, with a daily mean weight gain of 27 g (SD 11,84), se table. Rates of exclusive breastfeeding by discharge from

DigiHopp was 74% (n=43), with 84% (n=36) of these being fed directly breastfeeding. The rate of any breastfeeding was 95% (n= 56). Fifty–three parents (43%) responded to the questionnaire. Parents were overall satisfied, 94% to a very high or a high degree, with the healthcare service provided by the video consultations. The video consultations contributed to feeling safe in taking care of the infant at home, and 82% would to a very little or little degree have preferred home visits instead of video consultations.

Conclusion: Digital homecare is efficacy and safe for the preterm infants, their growth is sufficient, breastfeeding rates are maintained and parents feel safe and satisfied.

Table. Infant characteristics and weight (gram) and Z-score from at birth, discharge and to removal of feeding tube

Infants, N=58	Birth	Discharge	Feeding tube removal
GA/PMA weeks^{days}; median (min-max)	32^{4} (25^{1}-37^{0})	35^{5} (34^{0}-41^{1})	37^{4} (35^{0}-45^{4})
Weight in grams; mean (SD)	1818 (574)	2393 (366)	2742 (413)
Z-score for weight; mean (SD)	-4,38 (1,57)	-3,93 (1,52)	-3,82 (0,83)

GA: Gestational age
PMA: Postmenstrual age

Infant characteristics and weight (gram) and Z–score from at birth, discharge, and to removal of feeding tube

Infant characteristics and weight (gram) and Z–score from at birth, discharge, and to removal of feeding tube

None declared

ID 395. Growth and body composition of moderate-to-late preterm infants up to 6 months corrected age, a randomized controlled trial on nutrition after discharge

Doctor Monique Van De Lagemaat[1], Doctor Charlotte Ruys[1], Miss Jacqueline Muts[1], Doctor Martijn Finken[1], Doctor Joost Rotteveel[1], Professor Johannes van Goudoever[1], Doctor Chris van den Akker[1]

[1]Amsterdam UMC, Amsterdam, Netherlands

Background/aims:
Especially for preterm infants, early nutrition is key for ensuring optimal growth and body composition, thereby mitigating potential cardiometabolic risks. These risks are also observed after moderate–to–late preterm birth (i.e., gestational age 32–36 weeks). We hypothesized that moderate–to–late preterm infants who are formula–fed and, from term equivalent age (TEA) onwards, are randomized to a protein– and mineral–enriched but isocaloric postdischarge formula (PDF) instead of a standard term formula (STF) have similar weight but lower fat mass at 6 months corrected age (CA).

Methods:
After enrollment <7 days postpartum, moderate–to–late preterm infants received fortified human milk and/or PDF, depending on parental preference. At TEA, infants with >25% formula intake were randomized to continue the same PDF (n=47) or switch to STF (n=50); unfortified human milk (HM) fed moderate–to–late preterm infants (n=60) served as controls. Formula intake was assessed from diaries. At TEA and 6 months CA, we assessed anthropometry and dual–energy x–ray absorptiometry estimated lean mass (LM), fat mass (FM), and bone mineral content (BMC).

Results:

All groups had similar gestational age (median[P25;P75]: 34.3[33.5–35.1] weeks), birthweight (mean ± SD: 2175 ± 412 g), and anthropometry at TEA (i.e. randomization of formula–fed infants). PDF–fed infants had lower %FM than HM–fed infants at TEA (17.4 ± 6.2 versus 19.8 ± 6.6%, P=0.02). Similar volume intake (mL/kg/d) led to higher protein, calcium, and phosphorus intakes in PDF than STF–fed infants.
At 6 months CA, PDF–fed infants had similar weight and %FM but higher head circumference (43.9 ± 1.3 versus 43.4 ± 1.5 cm, P<0.05), LM (4772 ± 675 versus 4502 ± 741 g; P<0.05), and BMC (140.1 ± 20.3 versus 130.8 ± 22.6 g; P<0.05) than STF–fed infants; HM–fed infants had comparable weight and head circumference but lower length and BMC than PDF–fed infants.

Conclusions:

Compared to standard term formula, moderate–to–late preterm infants fed postdischarge formula for 6 months after term equivalent age demonstrated modest improvements in length, head circumference, LM and BMC, potentially beneficial for future health.

None declared

ID 921. Home NGT feeding: Facilitating family integrated care and reducing baby maternal separation.

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Background

Prior to outreach services, neonates requiring NGT feeds would stay in hospital until full oral feeds were established. This resulted in prolonged hospital stay and mother–baby separation impacting on bonding, mental health, resources, and capacity.

Aim

To facilitate parental involvement by completing NGT feeding competencies and feeding support to improve family centred care and early transition home.

Methods

With the support of multi–professional staff on the NNUs, carers completed NGT competencies, and were then supported by NCOS at home to transition from tube to oral feeding.

Results

138 babies entered the NGT feeding pathway under the care of NCOS. 52 babies were excluded from this evaluation as no information was available on length of time NGT was in–situ and used. 1 baby was excluded as on NGT and oxygen pathway. Mean birth gestation 33+1 weeks (26+5–39 weeks) and mean gestation at discharge was 36+5 weeks. 70% were born between 32–36+6 weeks with discharge gestation of 36–44+1 weeks. The earliest gestation discharged home was 34+4 weeks.

For 85 babies, NGT was used for mean of 4.4 days (0–39). The mean admission days following the NGT pathway was 23.6 (5–63 days). These figures are inflated as the policy requires the NGT to be left inserted for 48 hours post last use, poor weight gain and families requiring additional support.

Overall, 3,236 care days delivered at home resulting in shorter hospital stay by average of 23.6 days per baby, improving capacity and reduced maternal baby separation. Parental feedback showed that all rated the service as very good indicating the positive effect on families.

Conclusion

Delivering special care at home under feeding pathway has reduced time spent in hospital, enhanced family's healthcare experience, reduced stress of hospital visits, increased flexibility for caring for siblings and broader family dynamics and helped units with improved flow and capacity.

A comparative study with NGT fed babies in hospital, and a qualitative parental survey, could help validate the impact of early discharge under NCOS.

None declared

ID 7. Introduction of solid foods in preterm infants and its impact on growth in the first year of life

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Background: Evidenced–based guidelines for the introduction of solid foods in preterm infants are not available so far.

Aims: Aim of this study was to examine whether the timepoint of introduction of solid foods in preterm infants has an impact on growth in the first year of life.

Methods: This was a prospective observational study in very low birth weight infants. According to the individual timepoint of introduction of solid foods, infants were divided in an early complementary feeding group (<17th week of life corrected age) and a late complementary feeding group (⩾17th week of life corrected age). Primary outcome was length at 12 months corrected age, secondary outcomes included other anthropometric parameters such as weight, head circumference, BMI, and their corresponding z–scores.

Results: In total, data of 199 infants were available for analysis. 112 infants were assigned to the early group, 87 to the late group. Infants of the early group had a higher birth weight and gestational age (early group, median: birth weight 925g, gestational age 27+1 weeks; late group, median: birth weight 820g, gestational age 26+3 weeks). At 12 months corrected age, there were differences in anthropometric

parameters between study groups (early vs. late group, median shown: length 74,8 vs. 74 cm, p=n.s., weight 9,2 vs. 8,9 kg, p=n.s., head circumference 45,5 vs. 45 cm, p=.04). A linear regression analysis showed no impact of timepoint of introduction of solid foods on length at 12 months corrected age.

Conclusions: The timepoint of introduction of solid foods had no impact on growth in the first year of life.

None declared

ID 597. The influence of maternal and perinatal factors on body composition in the term neonates

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BACKGROUND: Neonatal body composition is a better indicator for pregnancy outcome and metabolic health compared to birth weight. Some pre-pregnancy maternal conditions and perinatal factors may influence the neonatal body composition.

OBJECTIVES: The aim of this study was to determine maternal and perinatal factors influencing neonatal body composition at birth in Indonesian term infants
METHODS: The study was conducted in Dr. Sardjito General Hospital, Yogyakarta, Indonesia. A total of 68 mother-infant pairs of Javanese origin were recruited into this study. Maternal characteristics were obtained from parental questionnaires or

maternal health book. Anthropometry (weight (g), length (cm) and head circumference (cm)) was carried out at birth. Neonatal body composition was examined with the dual-energy x-ray absorptiometry (DXA) scan method in the first week of life. Infants were classified as appropriate for gestational age (AGA) if their birth weight were ⩾ 10th and < 90th or as Small for gestational age SGA if < 10th percentile for gestational age.

RESULTS: The mean ± SD of lean mass, fat mass and fat mass percentage (%FM) were 2627 ± 421 g, 159 ± 54.5 g and 5.6 ± 1.2 g, respectively. SGA infants have significant less fat-, lean mass, and %FM than AGA infants. Multiple linear regression showed that SGA infants had significantly lower %FM at birth than AGA infants (p= 0.041). Pre-gestational Body mass index (BMI) and gestational age had a significantly positive association with %FM (p= 0.033, and 0.011, respectively). These variables are responsible for 26% of the variation in % FM of term newborns at birth.

CONCLUSIONS: At birth, SGA infants had a significantly lower %FM when compared to AGA infants. Gestational age and pre-gestational BMI were significantly and positively associated with %FM.

KEYWORDS: maternal factors, perinatal factors, body composition, fat mass, small for gestational age, neonates

None declared