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UPDATE IN NEONATAL NUTRITION

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Abstract book
ASSOCIATIONS BETWEEN BRAIN METABOLISM AND EXECUTIVE FUNCTION DEFICITS IN CHILDREN BORN VERY PRETERM

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Aims and Objectives: Executive function deficits in very preterm-born (VPT) children have been linked to anatomical abnormalities in white matter and subcortical brain structures. However, so far, it is not known whether alterations in brain metabolites are also associated with such deficits. This study aimed to compare brain metabolite ratios between VPT and term-born (TB) children and to explore their association with EF.

Materials and Methods: A group of 79 VPT participants aged 8 to 13 years and 80 TB peers were assessed with a comprehensive battery of EF tasks. A composite score was calculated to reflect overall EF abilities. Cerebral metabolites were obtained from two voxels in the frontal WM and the basal ganglia/thalami, respectively, using proton magnetic spectroscopy (MRS). Metabolite concentration ratios to Creatine (Cr) were calculated for N-acetylaspartate (NAA), Choline containing compounds (Cho), Glutamate and Glutamine (Glx), and myo-Inositol (mI), and were correlated with EF performance using linear regression.

Results: VPT children had significantly lower overall EF abilities while controlling for age at assessment, sex, socioeconomic status, and processing speed (β = -0.21, p = .007). Adjusted R² = 0.63, p < 0.01) compared with TB peers. VPT participants further had lower Glx/Cr (mean difference of -5.91 %, p = 0.003 and higher Chol/Cr ratios (7.39 %, p = 0.01)) in the frontal WM. Higher frontal Glx/Cr ratios were associated with better EF performance (β = 0.16, p = 0.03; adjusted R² = 0.53, p < 0.001). A shift value of 14.3 kPa at one week of life predicts BPD with 73.7 % sensitivity and 93.3 % specificity (AUC: 0.85, p = 0.001). A shift value of 14.3 kPa at one week of life predicts moderate and severe BPD at 36 w PMA with 66.7 % sensitivity and 78.3 % specificity (AUC: 0.76, p = 0.002).

Conclusions: Preterm birth is associated with long-term brain metabolite alterations in the frontal WM, partly explaining deficits in EF abilities.

EARLY ASSESSMENT OF SHIFT OF THE SPO2 VS. PIO2 CURVE PREDICTS BRONCHOPULMONARY DYSPLASIA IN EXTREMELY PRETERM INFANTS

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Aims and Objectives: Rightward shift of the peripheral arterial oxygen saturation (SpO₂) versus inspired oxygen pressure (PIO₂) curve is a marker of pulmonary gas exchange. We have previously shown, that shift of the SpO₂ versus PIO₂ curve can be used for the assessment of bronchopulmonary dysplasia (BPD) severity in preterm infants at 36 weeks (w) postmenstrual age (PMA). We hypothesised that rightward shift of the SpO₂ versus PIO₂ curve assessed in the first weeks of life is a predictor of BPD at 36 w PMA.

Results: 32 extremely preterm infants with a median (range) gestational age of 26.4 (23.8–28.0) w were studied. Shift values in infants with BPD were significantly higher compared to infants without BPD throughout the first eight weeks of life (p ≤ 0.001, Mann-Whitney U tests). Receiver operating characteristic curve showed a shift value of 13.3 kPa at one week of age predicts BPD with 73.7 % sensitivity and 93.3 % specificity (AUC: 0.85, p = 0.001). A shift value of 14.3 kPa at one week of life predicts moderate and severe BPD at 36 w PMA with 66.7 % sensitivity and 78.3 % specificity (AUC: 0.76, p = 0.002).

Conclusions: Shift assessed at one week of age enables prediction of BPD at 36 weeks PMA. Prediction of moderate and severe BPD should be treated with caution for the limited number of infants included in the study. Nevertheless, infants with high shift values at one week of age are at risk of moderate to severe BPD. Early detection of preterm infants at risk for the development of BPD might benefit from targeted early interventions.

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Music in preterm infants enhances maturation of neural pathways involved in emotion Processing

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Background and aims: Prematurity disrupts brain maturation by exposing the developing brain to different noxious stimuli present in the neonatal intensive care unit and depriving it from meaningful sensory inputs during a critical period of brain development, what can be associated with later neurodevelopmental impairments. Musikotherapy has been used as an approach for meaningful sensory stimulation, relevant for activity-dependent brain plasticity and might influence networks formed early in development and affected by prematurity.

Using multi-modal Magnetic Resonance Imaging (MRI), we aimed to study the impact of a music intervention on premature infants’ structural brain development.

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Aims and objectives
To investigate center-specific short-term outcome differences in (near) term neonates with hypoxic-ischemic encephalopathy (HIE) receiving therapeutic hypothermia. This data will help us to establish benchmarks for the assessed outcome measures. Benchmarking is a continuous need with the ultimate goal to improve modifiable short-term outcomes in neonates with HIE.

Materials and methods
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Background The number of preterm children is high and affects about 5-10% of all pregnancies. However, it is still unclear how a premature birth influences the parents' quality of life and feelings of self-efficacy.

Aim Aim of this project is to evaluate the health-related quality of life and self-efficacy of parents of term (gestational age ≥ 37 weeks) versus preterm newborns (gestational age 34.1-36.6 weeks) during the first week of life of their newborn child. This questionnaire includes 47 questions which cover the assessment of the quality of life (short form 12), anxiety, and depression (Edinburgh postnatal Depression Scale), couple satisfaction (ICS) and parental self-efficacy (Tool to Measure Parental Self Efficacy). Assuming normally distributed responses within each group, we compared them with the aid of analysis of variance and Bonferroni’s post-hoc testing.

Results Since 2019, we were able to recruit parents of 135 term and 21 late preterm children. As expected, late preterm children were significantly older (p < 0.05). However, there were no significant differences in the assessment of the quality of life (short form 12), anxiety (HAD-A), and depression (HAD-D). Considering the average of all 20 ROIs per subject, mean perfusion values were not significantly different from newborns, while PTM values were not significantly different from full-term newborns at term-equivalent-age (15 without music exposure and another third (30.2 %) was unaware. Further education was only offered at their institution, one-third (32.8 %) reported it was not, or not having perinatal PC guidelines at site in comparison to nurses or psychosocial staff members (p<0.05). Furthermore, one-third of HCPs (37 %) reported that further education in perinatal PC was offered at their institution, one-third (32.8 %) reported it was not, and another third (30.2 %) was unsure. Further education was more commonly offered in German speaking area (p<0.05). Overall, a large majority of HCPs (94.2 %) expressed the need to receive further perinatal PC education.

Conclusions In this study, we have taken a first step in gathering national data on the services and needs regarding perinatal PC of HCPs working in Swiss perinatal centres. Our findings show gaps in the availability of perinatal PC guidelines and further PC education. More importantly, perinatal centres in possession of guidelines report greater satisfaction with PC in their institution. The gathered knowledge in this survey can underpin national clinical guidelines, so that families could benefit from consistent care as well as strengthen perinatal PC nationwide.
PLASMA MR-PRO-ATRIAL NATRIURETIC PEPTIDE AND CT-PRO-ENDOTHELIN-1 IS ASSOCIATED WITH RESPIRATORY MORBIDITY IN VERY PRETERM INFANTS

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Aims and objectives
Bronchopulmonary dysplasia (BPD) is a major complication of preterm birth and associated with increased morbidity and mortality. Early prediction of BPD based solely on clinical parameters is difficult. The aim of this study was to investigate the role of MR-pro-Atirial Natriuretic Peptide (MR-proANP) and CT-pro-Endothelin-1 (CT-proET-1) as markers of respiratory morbidity in very preterm infants. Our objectives were to determine the association of biomarker levels at the age of 1 week with the duration of supplemental oxygen as well as with the composite outcome of BPD or death.

Materials and methods
A prospective, observational, two-center cohort study (Clinical Trials Identifier: NCT02093562) was performed at two neonatal tertiary level care units (Basel and Bern). Preterm infants <32 weeks GA were eligible for this study. BPD was defined as need for supplemental oxygen at 28 weeks GA. MR-proANP and CT-proET-1 levels were analysed from blood samples taken at day 7 of life by automated immunoassays (BRAHMS Biomarkers, Thermo Scientific, Henningsdorf, Germany).

Results
A total of 229 preterm infants were included into the study (median (IQR) GA and birth weight were 29.9 (29.0–30.7) weeks and 1150g (840–1410g), respectively. Regression analysis revealed an association between MR-proANP and the duration of supplemental oxygen at 28 weeks GA. MR-proANP and CT-proET-1 levels were analysed from blood samples taken at day 7 of life by automated immunoassays (BRAHMS Biomarkers, Thermo Scientific, Henningsdorf, Germany).

Aims and objectives
Lack of physical stimulation can contribute to metabolic bone disease of preterm infants, resulting in poor bone mineralization and growth. Physical activity programs combined with adequate nutrition might help to promote bone mineralization and growth.

The primary objective was to assess whether physical activity programs in preterm infants improve bone mineralization and growth and reduce the risk of fracture. The secondary objectives included length of hospital stay, skeletal deformities, neurodevelopmental outcomes, and adverse events.

This is an update of the review first published in the Cochrane Database of Systematic Reviews 2007.

Methods
We used the standard search strategy of Cochrane Neonatal to search the Cochrane Central Register of Controlled Trials, MEDLINE, EMBASE, and CINAHL. We also searched clinical trials databases, conference proceedings, and the reference lists. Data collection, study selection, and data analysis were performed according to the methods of the CNRG.

Selection criteria
RCTs and quasi-RCTs comparing physical activity programs versus no organized physical activity programs in preterm infants.

Results
Sixteen trials enrolling 496 preterm infants were included in this review. Methodological quality and reporting of included trials were variable.

Four trials demonstrated moderate short-term benefits of physical activity for bone mineralization. The only trial assessing long-term effects on bone mineralization showed no effect of physical activity administered during initial hospitalization on bone mineralization at 12 months corrected age. Meta-analysis from four trials demonstrated a positive effect on daily weight gain (WMD 1.90 g/d, 95% CI 0.98 to 3.19). Data from five trials showed no effect on linear or head growth. Three trials reported on fractures (this outcome occurred in one patient in the control group and complications of preterm birth (no significant differences between both groups). Consideration of the effects on the individual trials resulted in a positive effect on daily weight gain and a non-significant difference in fracture rates.

Conclusions
Some evidence suggests that physical activity programs for preterm infants that focus on short-term weight gain and bone mineralization in preterm infants. Data are inadequate to allow assessment of harm or long-term effects. Current evidence does not support the routine use of physical activity programs in preterm infants. Further trials incorporating infants with a high baseline risk of osteopenia are required. These trials should address adverse events, long-term outcomes, and the effects of nutritional intake.

CHARACTERIZATION OF THE ACOUSTIC ENVIRONMENT IN A NEONATAL INTENSIVE CARE UNIT

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Introduction
Hypoxia is a major cause of intrauterine stress and can lead to intrauterine growth restriction (IUGR). The exact mechanism behind this disease is still unknown. This project aims at the detection of molecular mechanisms in response to hypoxia and starvation in placental cells.

Materials and methods
Placental samples (placenta placentas) were obtained from: (1) stillbirths and neonatal deaths of premature infants (21% of organs) and/or starvation (glucose free medium) for time periods between 4 and 48 hours and then assessed for viability, DNA-, and protein content. In addition, vascular endothelial growth factor (VEGF) and interleukin (IL8) were analyzed with the aid of an enzyme linked immune-absorbent assays. Effect sizes between the two groups were compared using the One-way ANOVA and Tukey posthoc correction.

Results
Hypoxia alone did not reduce viability or DNA content neither in JEG-3 nor in JAR cells, but hypoxia in combination with starvation led to an additional mean reduction in viability by 60.80% (p < 0.01) after 12-24 hours. Additional reduction of DNA content of more than 50% was visible (p<0.05). Likewise, the protein content per plate was significantly reduced after 24 hours. These effects could also be observed at increased levels of VEGF or IL8 in the cellular supernatant.

Conclusions
Glucose starvation affects cellular viability, DNA and protein content of JAR and JEG-3 cells in combination with hypoxia. It implies that hypoxia and starvation might act as different types of placental cell death (necrosis, apoptosis and autophagy) and compare these results to data from human tissue samples.
The postoperative course was uneventful with complete regression formed, with drainage of 20ml of bloody fluid. Further examination the transurethral urine catheter correctly placed in the bladder. Ad -

transabdominal ultrasound revealed a large hydrometrocolpos and bluish discolored abdomen with urinary retention. External genital examination were uneventful. At 5 days of life, she developed a distended, suspected mucocolpos. Birth and postnatal adaptation including mictu -

tion and incision is recommended.

We present the case of a term born girl with antenatally sus -

pected mucocolpos. Birth and postnatal adaptation including mucu -

tion were uneventful. At 5 days of life, she developed a distended, suspected mucocolpos. Birth and postnatal adaptation including mictu -

tion and incision is recommended.

Most neonates with imperforate hymen are asymptomatic, but it is an important diagnosis to consider in the newborn period. The most common symptoms are cervical bleeding, urinary tract infection, and palpable abnormality in the lower abdomen. The diagnosis is typically made during routine pelvic examination. Emergency surgery is indicated if the patient presents with severe symptoms such as sepsis, hematometra, or hydrometrocolpos. The surgical treatment of imperforate hymen involves an incision to create an artificial opening. The risk of complications is relatively low, but it is important to monitor the patient closely postoperatively. The patient was discharged home after a uneventful hospital stay.

The primary cause of hydrometrocolpos in neonates is imperforate hymen. However, other conditions such as cloacal anomalies, Mayer-Rokitansky-Küsters syndrome, and vaginal atresia can also cause similar symptoms. The management of hydrometrocolpos depends on the underlying cause and the severity of the symptoms. In some cases, expectant management may be appropriate, while in others, definitive surgery is necessary. The patient was discharged home after a uneventful hospital stay. The follow-up was arranged to monitor for any signs of recurrence or complications.
When an elephant hides another one: a case report

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Materials and Methods An online questionnaire was sent to all neonatologists of the nine level III Neonatology departments in Switzerland. Questions covered a range of topics including confidence in predicting long-term prognosis, knowledge of available long-term outcome and sources of information consulted. In addition, the questionnaire explored if neonatologists want to improve their knowledge. Results 34 neonatologists answered the questionnaire. Out of the 34 participants, approximately 50% consider their confidence in predicting long-term prognosis insufficient. About 25% indicate level and 25% indicate having little confidence in their counselling knowledge. Considering diagnostic tools to predict long-term outcome, the ultrasound and MR imaging remain the two methods most neonatologists would rely on, followed by ultrasound of the abdomen and echocardiography. In terms of information sources used to predict long-term outcome, most participants referred to review articles and data from the SwissNeoNet. 65% of the participating neonatologists would like to have a better knowledge regarding the long-term outcome of the preterm children. A better exchange between the neonatologist and other disciplines involved in the further medical care and an interdisciplinary follow-up consultation are suggested by participants, alongside a number of other suggestions.

Conclusion Prediction of the long-term neurodevelopment of the extremely preterm children remains challenging. Based on the results of the survey, the majority of Swiss neonatologists wish to gain a better knowledge and obtain more information about the long-term development of their little patients.

Early onset neonatal sepsis in africa - alarming results from the PROSPERO study

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Aims and Objectives Of all 2.5 million neonatal deaths per year, roughly 40% occur in Sub-Saharan Africa, and one-quarter is due to infection. Neonatal Early Onset Sepsis (EOS) occurs in the first days of life through maternal genitalinfection and faecal colonization. Historically, primary neonatal pathogens in EOS are Group B streptococcus, Listeria monocytogenes, and enterobacteria, whereas, empiric EOS treatment with ampicillin and gentamicin targets these bacteria. The evidence in EOS is not yet well established but reports claim gumes differing from high-inform icons and countries in resource availability.

Materials and Methods We searched PubMed, EMBASE and Web of Science without language restrictions for any type of study published between 01.01.2010 and 22.07.2019 that investigated EOS, neonatal colonization, maternal colonization, maternal infection and antibiotic resistance in Africa. A systematic review and meta-analysiss were performed using the most prevalent bacteria and the likelihood of resistance to commonly used antibiotics in EOS.

Results From 1184 retrieved titles for the outcome ‘neonatal ne-
sips’, 20 papers had exploitable information. We noted that Pseud-
oma aeruginosa prevalence increased progressively from 5% in 2010 to 15% in 2018. The year of publication explained 70.2% of the EOS prevalence variance (p<0.01).

Conclusion Empirical treatment of EOS with Ampicillin and Gentamicin is based on historical bacterial ecology, while, these anti-
biotics do not cover Pseudomonas aeruginosa efficiently. The in-
crease in EOS prevalence over time is alarming and may be responsible for a significant share of neonatal deaths in Africa.

How confident do neonatologists feel in predicting the long-term prognosis of the extremely preterm born children born <28 gestational weeks when discharging from the NICU?

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Aims and Objectives The birth of an extremely premature child is a profound experience for the parents, and the likelihood of sudden death is often complicated and the stay at the neonatal intensive care unit is typically very stressful period. Fortunately, at approximately calculated term most of the children are ready to be discharged. Often the discharge planning will raise questions about the development of the neonatal children. The aim of the study is to investigate the knowledge and confidence of neonatologists regarding long-term neurodevelopmental outcome and their needs to improve knowledge.

The MILK GAP: CONTEXTUALIZING HUMAN MILK BANKING AND INFORMAL MILK SHARING PRACTICES AND PERCEPTIONS IN SWITZERLAND

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Aims and objectives Human milk banks (HMB) in Switzerland exclusively provide pasteurized donor human milk (DHM) to hos-
italized infants. The Swiss HMBs are located only in the Ger-
man-speaking regions, which give rise to geographical, cultural and linguistic disparities to access safe DHM. In addition, despite the risks of pathogenic contamination, pathogenic transmission, in-
formal human milk sharing and selling online are rising in popularity and controversy. Limited evidence exists examining these practices and human milk sharing in Switzerland. Therefore, the goal of the study is to uncover the current challenges faced by Swiss hospitals and to investigate the motivations, practices, and perceptions of mothers who have engaged in online milk sharing.

Material and methods Following the review of scientific liter-
ure on milk banking and milk sharing and selling in Europe, we interviewed 10 Swiss hospitals (9 with milk banks, 4 without milk banks) and 5 mothers who donated or received human milk through online social media networks. We evaluated online milk sharing and selling platforms and their security procedures. Results Swiss HMBs are heterogeneous in practice and experi-
ence numerous challenges, e.g., high costs, inefficiency, low cap-
acity. For milk sharing, informal practices are more prevalent. Regarding informal milk sharing, online platforms were found to have no accountability nor hygiene procedures. We interviewed mothers from a milk sharing Facebook community to understand what motivated these women and other mothers and preferred untested and untraceable DHM to infant formula. Their safety and risk reduction practices were limited and varied.

Conclusions Currently, HMBs in Switzerland are not standard-
ized nor equally accessible throughout the country. As human milk is regulated and in demand, there is a risk of informal milk shar-
ing among mothers. Maternal participants experienced systematic...
SEVERE REFRATORY STATUS EPILEPTICUS IN A NEONATE

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Introduction Neonatal seizures are common with an incidence up to 3 per 1000 live births. The vast majority occurs on the first day of life and hipocriosephalic encephalopathy is the most common cause. We present the case of a term born neonate with left-sided hemimegalencephaly developing severe refractory status epilepticus.

Case presentation The patient was born to a 37 year old G4P3 mother at 37+4 weeks of gestation after an uncomplicated pregnancy. Admission was uneventful and the umbilical cord pH value was 7.30. Birth weight 3080g, length 49.5cm and head circumference 35.5cm. Mother and infant were transferred to the postnatal ward. Three hours later the patient had a generalized seizure with cyanosis. One hour later she had a second seizure and a loading dose of phenobarbital was given. She was transferred to the neonatal intensive ward. An amplitude integrated electroencephalography was installed and a cranial ultrasound was suggestive of left-sided hemimegalencephaly. A cerebral MRI on the next day confirmed the left-sided hemimegalencephaly, and also revealed a subependymal and one cortical tuber on the right. In combination with a retinal hamartoma and a positive family history the diagnosis of tuberous sclerosis was confirmed.

Over the next few days the patient developed a severe retractorseizure (10-40/min) and response to anticonvulsant therapy was slow. After consultation with the Department of Neurology the patient was referred for surgical evaluation. The patient was assessed for early antiepileptic surgery in form of hemi-lobectomy.

Conclusions The RED code protocol was introduced in our non-tertiary hospital in February 2019. Over a 9 month period, the red code button was pushed 6 times out of a total of 385 deliveries. No incident was reported nor thorough monthly test checks. Patient safety was assured. The staff was exposed to the protocol and aware of it.

Results The RED code caseaean protocol is efficient and easy to use. It provides high quality care and patients safety for life-threatening caesarean birth. A monthly technical maintaining test ensures the alarm system works and is known by the professional. In the future we wish to compare our system with that of a tertiary hospital, and measure team response time.
PERINATAL STROKE AND PLACENTA PATHOLOGY

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Perinatal stroke remains an important cause of cerebral palsy and it affects between 1 in 1600 and 1 in 5000 term newborns. Despite improvement in perinatal care, neonatal imaging techniques, much uncertainty persists regarding its underlying pathogenesis. Recent studies point to a multifactorial origin including both maternal and fetal/neonatal factors. The placenta, being the main interface, is likely to play a key role and is the plausible source of emboli to the fetal brain circulation. However, placenta abnormalities in perinatal stroke have been poorly studied due to limited availability.

Materials and methods

In this case series, we report 6 consecutive cases of perinatal stroke identified in our institution.

Results

In five cases (four full-term newborn and one preterm newborn) including one twin, perinatal stroke was diagnosed following focal seizures at birth and imaging showed acute unilateral neonatal stroke. In one single case, diagnosed was established after routine brain ultrasound in the setting of prematurity and twin pregnancy and was confirmed on brain MRI, showing already bilateral porencephalic cavities in the Sylvian territory. Placenta was available for all 6 cases, and showed various types of lesions. Placenta weight was increased in one single pregnancy, and was otherwise normal for gestational age. One twin monochorionic diamniotic twin only showed fetal vascular malperfusion, increased decidual vasculopathy, with defective spiral artery remodeling, and the share of the affected twin representing only 1/5th of the total normal for gestational age. One twin monochorionic diamniotic weight was increased in one single pregnancy, and was otherwise normal for gestational age. One twin monochorionic diamniotic pregnancy however showed disproportionate placenta attribution, the share of the affected twin representing only 1/5th of the total placental volume. The two other twin pregnancies were dichorionic diamniotic pregnancies. In one case, the placenta showed signs of decidual vasculopathy, with defective spiral artery remodeling, and vitous chorangiosis. In the last twin pregnancy, the placenta of the affected twin only showed fetal vascular malperfusion, increased nucleated red blood cells, and low-grade chronic villitis. The three single pregnancies showed respectively umbilical vein and arterial chorionic thrombosis, acute chorioamnionitis with fatal inflammatory response, and subchorial hematoma with placental infarcts and intervillus thromboses.

Conclusion

Pathology

Perinatal stroke and placenta pathology

Correlation of bilirubin levels with the quality of general movements in moderate preterms – a retrospective study

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Aims and objectives

Preterm infants have an increased risk of developing kernicterus, the reason why lower limits for phototherapy and exchange transfusion have been established in treating hyperbilirubinemia. Unphysiological hyperbilirubinemia can manifest itself in weight, fatigue and altered movement patterns. General Movements (GMs) are endogenously generated spontaneous movements that last until the end of the first half of the newborn’s life and reflect the functionality of the young nervous system. By applying the Prechtl optimality concept, it is possible to assess the quality of GMs and thus the neurological integrity. This study examines whether there is a correlation between bilirubin levels and the quality of GMs in moderate preterm infants.

Materials and methods

Based on the General Movement Optimality Score (GMOS), GMs of 55 moderate preterm infants were analysed globally and in detail using video recordings. Bilirubin levels closest to the video recording were collected from routine capillary blood tests and correlated with the quality of GMs and the GMOS.

Results

Gestational age of the 55 moderate preterm infants ranged from weeks 33+1/7 to 33+6/7 (median: 33+1). Birth weight ranged from 1240 g to 3130 g (median: 1960 g). Mean APGAR-Score after 1 minute was 8,6±1,7 and after 10 minutes 9. None of the preterm infants had hypoxic-ischaemic encephalopathy, periventricular leukomalacia, intraventricular haemorrhage or hypoglycemia. 25 preterm infants (46 %) showed normal GMs. Almost half of the patient population (49 %) had poor repertoire GMs. Cramped-synchronous and chaotic GMs were observed in only two (4 %) and one child (2 %), respectively. The median bilirubin level was 8.7 mg/dl (148 umol/l) with a limit of requiring phototherapy at 14 mg/dl (238 µmol/l). 2 moderate preterms (4 %) received phototherapy during their stay in hospital. At the time of the video recording, no preterm infant received phototherapy. The correlation coefficient between bilirubin levels and the GMOS is 0.293 at a significance level of 0.03. The correlation is statistically significant, however there is no clinical association between bilirubin levels and the quality of GMs.

Conclusions

This study did not demonstrate clinical association between bilirubin levels and the quality of GMs. This may be due to the fact that bilirubin levels of moderate preterm infants were too low to detect changes in the quality of GMs.

IMPLEMENTATION OF MULTIDISCIPLINARY IN-HOUSE RESUSCITATION TRAININGS AT TRIEMLI SPITAL ZURICH

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Aims and objectives

Based on the 2017 Swiss guideline “Neonatale Erstversorgung – interdisziplinäre Empfehlungen” 1 as a joint initiative our aim was to implement a structured multidisciplinary cooperation between obstetric, paediatric and anaesthetic department as encouraged by the guideline working-group. Main objectives of the initiative are: 1) Improving the quality of the perinatal care of neonates 2) Improve teamwork through appreciating approaches and perspectives of other specialties 3) Conduct resuscitation training in the “real working environment”. This approach should not replace other basic or advanced life support courses. It should strengthen the in-house interdisciplinary work in the daily setting.

Materials and methods

The trainings will be integrated in the hospital directive. This should ensure and maintain a continuous exchange between the involved departments. The training will be led by one doctor from the neonatal unit and one doctor from the department of anaesthesia. This will ensure that learning and improvements will be disseminated within multiple departments.

• 4th training with high-fidelity manikins
• 2 groups containing an equal number of participants from all 3 disciplines (doctors, nurses and midwives). This will mirror the participants during a serious event.
• 2 complex scenarios – The scenarios are simulated until they reach their final conclusion
• A post scenario enhanced skill station

Evaluation

The project started as a pilot in 2019 and will be continued in 2020 in a more standardized fashion including a quality control. To ensure this the questionnaires were designed together with the in-house quality control team.

The survey is divided into a short and long-term evaluation. The first part includes a pre and post-course evaluation to improve the course content and structure. The second part of the survey serves to evaluate the long-term impact on how staff members view the departmental safety culture. In particular, if departmental culture can be altered by the involvement of a few members in the training and encourage improvements in the coming years.

Conclusions

We hope that this project will contribute towards a safer environment in the care of neonates by improving and enhancing multidisciplinary teamwork and help to empower staff members during resuscitation setting in the future.

Results from the first Evaluation will follow in 2021.

1 Paediatric 20, Nr. 2, 2017:13-23; S1-12