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Results of a confidential perinatal audit in the Kyrgyz Republic.

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Introduction:
An audit of perinatal mortality cases in six pilot maternity hospitals since 2018 aims to improve care quality and technology. Experts analyzed 260 cases, identifying factors for inadequate care. Recommendations include improving government dialogue, implementing an electronic platform, and motivating medical staff.

Materials and methods:
The National Group of Experts analyzed 260 cases of perinatal mortality of newborns with a birth weight of more than 2500 grams and a gestational age of more than 37+0 weeks (stillbirths - 145 [antenatal fetal death - 124, intrapartum mortality - 21], early neonatal mortality - 115) .
Adapted WHO forms were used as tools
for recording and analysis of mortality cases, a protocol of a Perinatal Audit expert and clinical audit standards, an interview questionnaire with a mother and a family member who suffered a perinatal loss (verbal autopsy), which included data from the primary medical records about the quality perinatal services.

Research results:
Analysis of the factors of inadequate care in the early neonatal period showed that professional factors determining the insufficient volume or quality of care provided were identified in 79.1% (inadequate respiratory support according to indications, underestimation of pulmonary hypertension in newborns, lack of determination of water-electrolyte balance and inadequate infusion therapy), in the antenatal period 61.2% (problems of early detection of pathology and monitoring the intrauterine condition of the fetus, awareness of dangerous signs of pregnancy), in the intranatal period 57.1% (problems of monitoring the intrauterine condition of the fetus during childbirth, the use of cardiotocograms according to indications , maintaining a partograph, listening to the fetal heartbeat during labor).

Conclusion:
Recommendations involve government dialogue; Electronic platform implementation of perinatal documentation in health ministries, motivation and growth of perinatal medical staff;
Adherence to perinatal care standards and its delivery by Healthcare organizations;
Medical Associations preparation and revision of clinical guidelines and protocols based on the latest evidence;
Active interaction and involvement of the community in the provision of quality perinatal care, especially to vulnerable categories of the population.
none declared

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VARIATIONS IN MANAGEMENT AND OUTCOME IN HEMOLYTIC DISEASE OF THE FETUS AND NEWBORN: RESULTS FROM AN INTERNATIONAL REGISTRY

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Introduction:
Preventative efforts in pregnancy-related alloimmunization considerably decreased the prevalence of hemolytic disease of the fetus and newborn (HDFN). International studies are therefore essential to obtain a deeper understanding. Taken together with numerous treatment options, large practice variations between centers may exist. We aimed to assess variations in management and outcomes of HDFN between centers, and to identify opportunities to improve care.

Materials and Methods:
We evaluated variations in antenatal and postnatal management and quantified the effect of gestational age (GA) at birth on exchange transfusion frequency and examined risk factors for adverse neonatal outcome in this international, retrospective cohort study that was performed by 31 centers from 22 countries.

Results:
Most of the 2420 included pregnancies were affected by D-antibodies (75.5%). A total of 95 (3.9%) pregnancies resulted in fetal death. Of the 2325 liveborn neonates, 1349 (58.1%) received any form of antenatal treatment and 976 (41.9%) were only treated postnatally. Neonates with intrauterine transfusion were born at a median GA of 35.6 weeks [34.0-36.7], ranging between medians of 33.2 and 37.3 weeks between centers, while neonates without antenatal treatment were born at a median GA of 37.3 [IQR 36.3-38.1], ranging between medians of 34.9 and 38.9 weeks between centers. Postnatal data was available in 1855 liveborn neonates. Exchange transfusions were performed in 23.5% of neonates, with proportions varying from 0% to 78% between centers. IVIG was administered in 24.6% of neonates with proportions varying from 0% to 100%. Higher GA at birth was associated with a reduction in exchange transfusion frequency, decreasing from approximately 40% at 34weeks to 17% after 37+0. A weekly increase in GA at birth was associated with a decrease in the likelihood of adverse neonatal outcome with 43.3% (95%-confidence interval: 36.1-49.7), and neonates that received an exchange transfusion were 1.55 (95%-confidence interval: 1.10-2.18) times more likely to experience adverse neonatal outcome.

Conclusions:

We found significant practice variations in the antenatal and postnatal management of HDFN highlighting a lack of consensus. We identified the potential beneficial clinical effect of inducing delivery after 37+0 weeks in HDFN and an opportunity to implement international guidelines.

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Expansion of intrauterine inflammation: Propagation along the umbilical cord.

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Introduction: Histopathological evaluation is considered as a gold standard diagnosing intrauterine inflammation (IUI). According to the location of the inflammation, we differentiate maternal inflammatory response (MIR) and fetal inflammatory response (FIR). MIR (histological chorioamnionitis (HCA)) and FIR can be distinguished according to the site of inflammation. FIR is considered as a progression of HCA, however topological distribution and progression of histologic inflammation within the umbilical cord (UC) is unclear.

Objective: Our objective was to describe topographic distribution of FIR to analyze the expansion of IUI and its association with short-term adverse outcomes of preterm neonates.

Methods: We conducted a single center retrospective study including preterm infants born ≤32 weeks or ≤1500 grams birth weight between 2020 January and 2022 December, and had full histological evaluation based on the recommendation of the 2014 Amsterdam Placental Workshop Group Consensus Statement. The degree of IUI was evaluated in three compartments. Sections from the placenta (MIR) and sections both from the placental and fetal end of the UC (FIR). We collected prenatal, and perinatal clinical data.

Results: Out of 237 preterm infants (mean gestational age: 28.6 weeks, mean birth weight: 1165 grams), no IUI was in 154 cases (Group 1), while in 83 cases only HCA were present. HCA without FIR occurred in 34 (Group 2), HCA with FIR only at the placental side in 23 (Group 3), FIR in both side in 24 cases (Group 4) were seen. FIR only at the fetal side was rare; n=2. The occurrence of the most severe, Stage 3 HCA was significantly higher (p=0.009) in Group 4. compared to Group 3. In terms of short-term neonatal outcomes, the presence of FIR (groups 3 and 4) was associated with a higher incidence of intraventricular haemorrhage (IVH).

Conclusions: HCA and FIR together were associated with a higher incidence of IVH than HCA alone or in the absence of HCA. The more advanced form of HCA was associated with FIR not only on the maternal, but also on the fetal side of UC, suggesting an expansion of FIR towards the fetus during progression of HCA.

None declared.

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Exploring Neonatal Thrombocytopenia: prevalence and risk factors - Retrospective Study

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Background: Neonatal thrombocytopenia is one of the most common hematological pathology among infants in the neonatal intensive care unit and is usually classified as mild (100.000-149.000/µl), moderate (50.000-99.000/µl)) and severe (<50.000/µl). Thrombocytopenia can also be classified as early onset (within the first 72 hours of life) or late onset (after 72 hours).

Methods: We conducted a 5-year (2018-2023) observational retrospective study on 98 neonates admitted to our unit to determine the causes and risk factors of thrombocytopenia and also the prevalence between different groups of infants.

Results: 45% of the neonates with thrombocytopenia were female and 55% were male so there are no major gender differences. The year with the the most cases was 2022 (35,2%) followed by 2023(23,5%). In terms of gestational age, only 8,8% of the infants were 24-28 weeks gestation, most cases were encountered in the 37-42 gestational age group (45%). 46%% of the cases were encountered in the low birth weight group, followed by the very low birth weight group 17,6%. The most common maternal predisposing factors were pregnancy-induced hypertension or pre-existing hypertension (18,6%), preeclampsia (4,9%), and infections 9,8%; 5,8% of the mothers were detected with COVID-19 infection at the time of delivery. Most of the cases had early-onset thrombocytopenia. The most common neonatal risk factors were sepsis in 44,1% of babies and birth hypoxia in 18,6% of babies, only one newborn had alloimmune thrombocytopenia. 39,2% of cases recovered without treatment, while 48% of cases required corticosteroid treatment, and 4,9% had associated treatment with platelet transfusion.

Conclusions: The severity of neonatal thrombocytopenia in our unit was moderate to severe type. Pregnancy-induced hypertension was the most common maternal risk factor, while sepsis was the most encountered neonatal risk factor. Although, according to the literature, thrombocytopenia is more common in preterm than term infants, in our unit the higher number of cases was in the 37-42 gestational age group. Maternal-fetal infection and birth hypoxia were associated with early-onset neonatal thrombocytopenia while late-onset thrombocytopenia was mainly highlighted in infants with sepsis.

None declared

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SECOND ATTEMPT FOR PATENT DUCTUS ARTERIOSUS (PDA) CLOSURE: ROOM FOR ACETAMINOPHEN ? A RETROSPECTIVE SINGLE CENTER EXPERIENCE AT GASLINI CHILNDREN'S HOSPITAL

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INTRODUCTION

About 70% of VLBW babies receive medical and/or surgical treatment for PDA. Although ibuprofen and acetaminophen have been shown similar success rate in closing PDA (70-80%), a substantial portion of PDA fails to close after the first course of medical therapy, leading to second drug therapy and eventually surgery. Concerns about drug side effects are well known although less experience relates to acetaminophen especially for the second administration. We more recently introduced acetaminophen in the clinical practice to determine its efficacy versus ibuprofen also as second line treatment in closing persistent PDA.

METHODS

We conducted a retrospective research on very low birth weight (VLBW) infants admitted who were treated for PDA. Exclusion criteria were death before or during treatment and congenital heart disease. We collected information about clinical course and PDA treatment and outcome. Acetaminophen posology was 15 mg four times a day for 5 days, ibuprofen was administered for 3 days (10 mg the first day, 5 mg the second and third day).

RESULTS

We included 118 infants of 305 total VLBW. First course ibuprofen (dosage and length of therapy) was effective in 32 of 44 infants (73%) treated, acetaminophen (dosage and length of therapy) in 59 of 74 (80%). Second course therapy with ibuprofen was effective in 6 of 14 infants (43%) while acetaminophen was in 7 of 12 (58%). No statistically significant difference was observed in first course and second course successful rate. Complete results are show in table 1.

DISCUSSION

This is the first single center study to compare the effectiveness rate of second course with acetaminophen in closing PDA. Our results vs historical patients treated with ibuprofen shows no statistical significant differences between acetaminophen and ibuprofen.

PDA TREATMENT			
	IBUPROFEN	ACETAMINOPHEN	P-VALUE
FIRST COURSE	32/44 (72,7%)	59/74 (79,7%)	P=0.49
SECOND COURSE	6/14 (43,0%)	7/12 (58,3%)	P=0.15
PATIENTS DATA			
	FIRST COURSE IBUPROFEN	FIRST COURSE ACETAMINOPHEN	P-VALUE
GESTATIONAL AGE	29	29+3	P=0.63
BIRTH WEIGHT	1155 g	1221 g	p= 0.54
BPD	24/44 (54,5%)	32/74 (41,8%)	P=0.25
NEC	4/44 (9,0%)	3/74 (4,0%)	P=0.42
TREATED ROP	14/44 (31,8%)	18/74 (24,3%)	P=0.39
PWML	3/44 (6,8%)	8/74 (10,8%)	P=0.53
HIGH GRADE IVH	6/44 (13,6%)	7/74 (9,4%)	P=0.54

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CONTINUOUS GLUCOSE MONITORING (CGM) IN PRETERM NEWBORN: THE EFFECTS OF ANTENATAL CORTICOSTEROIDS (ACS) PROPHYLAXIS FOR LUNG MATURATION

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Introduction
A correlation between antenatal corticosteroid (ACS) administration for lung maturation and neonatal hypoglycemia (using intermittent blood samples) has been demonstrated in late preterm newborns (1).
We wished to evaluate in a prospective single center study glycemic control through CGM in preterm infants after ACS. Secondary we wished to analyze differences according to the gap time between ACS administration and birth or according to a gestational age cutoff (34 wks).

Method
Inborn and outborn babies delivered between 31+0 and 34+6 of gestation from February to August 2023 were included. ACS exposition (complete, incomplete, not administered) and timing (< 7 days; 7-21 days before birth) were evaluated. The babies underwent CGM in the first 48 h of life. Hypoglycemia, hyperglycemia, and glycemic variability (GV) expressed by MAGE, were assessed.

Results
37 newborns enrolled: 26 exposed to complete ACS, 6 to incomplete, 5 not exposed. We found a higher number of hypoglycemic events during the first day of life in infants exposed to complete ACS (p= 0,0001) [Table]. MAGE did not show statistically significant differences between groups, but it described higher GV in newborns exposed to complete ACS. Infants exposed to ACS within 7 days of birth had more hypoglycemic events (p= 0,0001) [Table]. In the population exposed to complete ACS, hypoglycemic and hyperglycemic events were more common in more premature newborns < 34 weeks of gestation (p= 0,05 and p=0,01) [Table].

Conclusion. Complete ACS administration seems to increase hypoglycemic events in preterm newborns in the first 24 h of life, particularly in more premature babies and when gap between ACS and birth was within 7 days from birth. These preliminary data suggest to study also more preterm babies (below 31 weeks of gestation) at higher risk of hypoglycemia and GV.

Hypoglycemic and hyperglycemic episodes	ACS complete course	ACS partial course	ACS not administered
number of detection 1st day	6486	1532	1334
< 47 mg/dl (%)	74 (0,8)	0	0
> 180 mg/dl (%)	17 (0,3)	0	5 (0,4)
number of detection 2nd day	6499	1261	1468
< 47 mg/dl (%)	10 (0,2)	0	0
> 180 mg/dl (%)	0	0	0
Hypoglycemic and hyperglycemic episodes and time of ACS administration	**ACS ≤ 7 days N= 17**	**ACS > 7 days N= 9**	**p value**
number of detection 1st day	4763	1723	
< 47 mg/dl (%)	74 (1,6)	0	**0,0001**
> 180 mg/dl (%)	11 (0,2)	6 (0,1)	0,41
number of detection 2nd day	5073	1426	
< 47 mg/dl (%)	10 (0,2)	0	0,13
> 180 mg/dl (%)	0	0	
Hypoglycemic and hyperglycemic events and gestational age	**< 34 weeks of gestation N= 20 babies**	**≥ 34 weeks of gestation N= 6 babies**	**p value**
number of detection 1st day	4041	2445	
< 47 mg/dl (%)	56 (1,4)	18 (0,7)	**0,02**
> 180 mg/dl (%)	17 (0,4)	0	**0,01**
number of detection 2nd day	4302	2197	
< 47 mg/dl (%)	9 (0,2)	1 (0,0)	0,18
> 180 mg/dl (%)	0	0	/