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A REVIEW OF UTILIZING ANTENATAL CORTICOSTEROIDS IN GROUPS AT RISK OF PRETERM BIRTH

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ABSTRACT

In recent years, there has been an increase in the number of preterm births, since this pregnancy complication, which remains a major cause of perinatal morbidity and death, is complex and difficult to anticipate in many situations. Many bibliographic sources support the notion that preterm birth has a hereditary propensity. The "recurrence" of preterm birth in women, as well as its increasing frequency in ethnic groups, shows a link to genetic variables, either as such or because of gene-environment interactions. Preterm babies need to stay in a special nursery unit at the hospital. Some infants need to spend time in a unit that cares for them and closely tracks their health day and night. This is called a neonatal intensive care unit (NICU). A step down from the NICU is an intermediate care nursery, which provides less intensive care. Special nursery units are staffed with healthcare providers and a team that's trained to help preterm babies.

KEYWORDS: Premature, Preterm Infants, Antenatal Corticosteroids, Placenta, Fetus, Developing Lungs and Tocolytic Drugs.

1. INTRODUCTION

A preterm birth occurs when a baby is born too early. The birth occurs before the 37th week of pregnancy. A normal pregnancy lasts around 40 weeks. Premature newborns frequently have major health issues, particularly those born extremely early. These difficulties frequently differ. However, the earlier a kid is born, the greater the likelihood of health complications. A newborn could be: Late preterm births occur between 34 and 36 weeks of pregnancy. Moderate preterm, born between 32 and 34 weeks of gestation. Very preterm, born between 28- and 32-weeks' gestation, and extremely preterm, born before 28 weeks gestation. So, most premature births occur in the late preterm stage.

Some signs of being born too early comprise small size, with a head that's hugely equated with the body. Structures that are sharpie and less rounded than a full-term baby's structures outstanding to a lack of cells that store fat. Satisfactory hair that covers much of the body. Low body temperature, principally right after birth in the delivery room. Trouble breathing and Feeding problems. The subsequent tables demonstrate the median birth weight, length, and head circumference of premature babies at different gestational ages for each sex.

Table I: Weight, Length, and Head circumference by gestational age for boys.

Gestational age	Weight	Length	Head Circumference
40 weeks	3.6 kg	51 cm	35 cm
35 weeks	2.5 kg	46 cm	32 cm
32 weeks	1.8 kg	42 cm	29.5 cm
28 weeks	1.1 kg	36.5 cm	26 cm
24 weeks	0.65 kg	31 cm	22 cm

Table II: Weight, Length, and Head circumference by gestational age for girls.

Gestational age	Weight	Length	Head Circumference
40 weeks	3.4 kg	51 cm	35 cm
35 weeks	2.4 kg	45 cm	31.5 cm

32 weeks	1.7 kg	42 cm	29 cm
28 weeks	1.0 kg	36 cm	25 cm
24 weeks	0.60 kg	32 cm	21 cm

The rest of the paper is organized as follows: Section 2 elaborates on short-term complications. In Section 3, the study presents an analysis of the long-term complications. Section 4 elaborates on the methodology adopted to perform this study. Also, we introduce here the aims and objectives as well as the main contributions of this work. In Section 5, a discussion of targeted papers and their challenges, open issues, and limitations are identified. New recommendations from the World Health Organization (WHO) to help improve the health of preterm infants are addressed in Section 6. Finally, the conclusions are presented in Section 7.

2. Short term complications

According to evidence from the literature and interviews (Staff 2024), in the first weeks, the complications of premature birth might comprise:

a) Heart issues: some frequent cardiac abnormalities in preterm neonates include patent ductus arteriosus (PDA) and low blood pressure. PDA is a connection between two major blood vessels: the aorta and the pulmonary artery. This cardiac defect often heals on its own. However, if not treated, it might cause complications such as heart failure. That's when the heart isn't pumping blood as efficiently as it should. Low blood pressure may require the use of intravenous fluids, medications, and, in certain cases, blood transfusions.

b) Breathing issues: a preterm newborn may have difficulty breathing because their lungs are not fully matured. If the baby's lungs do not contain a chemical that helps them to expand, he or she may have difficulty breathing. This is a curable condition known as respiratory distress syndrome. Preterm newborns frequently experience apnea or breathing pauses. Most infants outgrow apnea by the time they leave the hospital. Some preterm newborns have a less common lung condition known as bronchopulmonary dysplasia. Babies require oxygen for a few weeks or months, but babies often outgrow this issue.

c) Brain issues: the danger of brain hemorrhage increases the earlier a baby is born. This is known as an intraventricular hemorrhage. Most hemorrhages are minor and have no long-term consequences. However, some newborns may experience more severe brain hemorrhage, resulting in irreversible brain impairment.

d) Temperature control difficulties: premature newborns lose body heat fast. They lack the accumulated body fat of full-term infants. And they are unable to generate enough heat to compensate for the heat lost via their bodies' surfaces. Hypothermia is a serious condition that occurs when the body's temperature goes too low. Hypothermia in a preterm newborn can cause respiratory issues and low blood sugar. A premature newborn may expend all of the energy received from feedings to keep warm. That is why smaller preterm newborns require additional heat from a warmer or incubator at first.

e) Digestive issues: premature newborns are more prone to have underdeveloped digestive systems. This can result in conditions such as necrotizing enterocolitis (NEC). NEC causes injury to the cells that line the gut wall. This issue can arise in preterm newborns once they begin eating. Premature neonates that solely get breast milk have a significantly decreased chance of developing NEC.

f) Blood issues: premature newborns are at risk for blood disorders such as anemia and neonatal jaundice. Anemia occurs when the body lacks enough red blood cells. During the first several months of life, the newborn's red blood cell count gradually decreases. However, the decline may be larger in preterm newborns. The skin and eyes of newborns with jaundice appear yellow. It occurs when a baby's blood includes excessive, yellow-colored material from the liver or red blood cells. This material is called bilirubin. Jaundice can have numerous causes, but it is more frequent in premature neonates.

g) Metabolism issues: premature newborns sometimes struggle with metabolism. That is the process by which the body converts food and beverages into energy. Some preterm newborns may have extremely low blood sugar. Premature newborns have less stored blood sugar than full-term neonates, which can lead to this. Premature newborns also have difficulty converting stored sugar into more useful, active types of blood sugar.

h) Immune-system disorders: premature newborns often have underdeveloped immune systems. This can lead to an increased risk of sickness. A preterm baby's infection can swiftly spread to the bloodstream, causing a life-threatening condition known as sepsis.

3. Long term complications

Premature delivery can cause long-term health issues like

a) Cerebral palsy: this category of illness can cause issues with mobility, muscular tone, and posture. It might be related to an infection or insufficient blood supply. It can also result from a newborn's brain

damage, which can occur early in pregnancy or while the infant is still young (Staff 2024).

b) Having trouble learning: premature newborns are more likely to fall behind full-term babies at several milestones. A school-aged youngster who was born prematurely may be more prone to have learning difficulties.

c) Vision issues: premature newborns may develop an eye illness known as retinopathy of prematurity. This occurs when blood vessels enlarge and develop excessively in the retina, the light-sensing tissue located in the back of the eye. These enlarged veins can gradually damage the retina and drag it out of position. Retinal detachment occurs when the retina separates from the back of the eye. Without treatment, this can impair eyesight and result in blindness.

d) Hearing difficulties: premature newborns are more likely to lose some hearing. All newborns should have their hearing examined before leaving the hospital.

e) Dental issues: preterm newborns may have a higher risk of having problems with the hard outer layer of their teeth, known as enamel. Infants born very early may have teeth that take longer to mature.

f) Behavioral and mental health issues: children born prematurely may be more prone than full-term babies to experience mental health issues and developmental difficulties.

4. METHODOLOGY

Not all preterm newborns have health problems. However, premature birth can result in both short-term and long-term medical complications. Generally, the sooner a baby is born, the greater the likelihood of difficulties. Birth weight is also an important consideration. Some issues may be apparent at birth. Others may not arrive till later.

In a comprehensive literature analysis, published papers that address and debate the research issue of preterm birth are regained, charted, accumulated, arranged, and unsympathetically assessed. Google Scholar was selected from the available collection of scholarly research databases because of its widespread coverage of twelve excellent, peer-reviewed studies that are thoroughly controlled and relate to the subject matter. This paper established a broad-based search string covering the various topics of the study and the associated links to retrieve the scholarly literature from academic publishers, professional societies, online repositories, universities, and other websites. This online platform bargains a straightforward scheme for accompanying a broad search for scholarly literature across various disciplines and sources.

However, the search string included: "premature" & "heart failure" & "recommendations" & "improve" & "preterm infants" & "antenatal corticosteroids" & "placenta" & "fetus" & “developing lungs" & "tocolytic drugs". These were utilized to search for contradictions in the title, abstract, and keywords of articles to produce initial insights. The final database, which includes twelve documents in total, was considered reliable when conducting a systematic review (Inc. 2023). The reviewed papers were published in foremost journals and conferences “Core Curriculum for Maternal-Newborn Nursing 6th Edition”, “Global Women’s Health”, “Papyrus: Institutional Repository”, “Libraries and Learning Services”, “International Journal of Cardiology Congenital Heart Disease”, “Johannes Kepler University Journal”, “Obstetrics by Ten Teachers 21st Edition”, “AAP Publications”, “Quantitative Biology > Tissues and Organs”, “King’s Research Portal”, and “Biomedicines”.

The literature search covered the period between January 2021 and August 2024 and resumed 12 articles. The primary contributions of this work are as follows:

i. Illustrating the importance of preterm birth in terms of causes and issues
   Springer Nature's SharedIt content sharing program preterm birth is a leading cause of newborn death and health issues in babies. The elucidation of its genetic foundations can lead to a better knowledge of the biological mechanisms and accelerate the development of strategies for predicting program preterm birth.
ii. Addressing the significance of the global burden of preterm birth
   Addressing the global burden of preterm birth is crucial for reducing preterm-related neonatal and child mortality and accomplishing the Sustainable Development Goal target.
iii. Improving preterm birth outcomes
   Preterm birth interventions such as antenatal corticosteroids to improve neonatal lung maturation and skin-to-skin to combat hypothermia, essential newborn care including resuscitation of asphyxiated babies, continuous positive airway pressure for respiratory distress syndrome (RDS), and optimal infant feeding are globally recommended.

5. DISCUSSION

Challenges, Open Issues and Limitations

(Reyna 2022) illustrates that the chance in early infancy to combine baby developmental processes with parental energy to help newborns reach their full potential has exceeded expectations. In neonatal evaluations, the authors saw newborns' ability to organize around pleasant experiences of contact with a loving adult, which helped them better understand normal healing processes after labor and delivery as well as plasticity for recovery from central nervous system (CNS) traumas. As the study watched and identified with them to promote the children's best behavior, their parents could trust our

approaches and strive toward their infants' maximum recovery. As a result, assessments of preterm and normal newborns provided the study and parents with insight regarding organizational and continuing development. In later infancy, the face-to-face technique fulfilled the same role. In other words, an observational evaluation of a little infant includes his or her current organizing skills and the opportunity to watch what he or she will do to his parents and what they will have to do to organize him by sharing this observation with them. The study shares these processes and provides them the chance to notice the baby's great potential as well as his or her shortcomings. As a result, parents can use the energies of nurturing in their connection to ensure the baby's full recovery. The study concludes that serial observations across time allow parents to examine the baby's ability to arrange himself as he heals from a known set of events involving labor, birth, and new surroundings.

(Loiselle 2023) states that every year, almost 2.5 million babies die, with more than 80% being born with low birth weight (LBW) In fact, LBW is a complicated clinical entity that includes fetal growth restriction (FGR) and preterm birth (PTB). Because of the catastrophic consequences of utero-fetal inflammation on sensitive fetal organs, surviving neonates are more likely to have major perinatal morbidities (such as bronchopulmonary dysplasia, necrotizing enterocolitis, and newborn encephalopathy). There are presently no effective treatments for fetal antepartum protection. IL-1β is a particularly harmful proinflammatory mediator. The host lab developed Rytvela, a new allosteric IL-1 receptor antagonist that has been demonstrated to be efficacious against PTB when given prophylactically. The purpose of this research is to better define Rytvela by assessing its effectiveness in preventing PTB and FGR when taken following the first inflammatory insult in a more realistic clinical scenario. The study used a method that states that on days 16-17 of gestation, pregnant CD-1 mice received proinflammatory/pro-labor injections of IL-1β (1 μg i.u.) or LPS (10 μg i.p.). Rytvela (2 mg/kg/day s.c.) was delivered at varied time intervals (0.5, 2, 4, 6 h) following the first inflammatory insults. The study illustrates that management of Bronchopulmonary Dysplasia (BPD) may include antenatal corticosteroids, postnatal surfactant, caffeine, vitamin A, avoidance of excessive fluid intake early in life, and use of the lowest possible FiO2 levels, tidal volumes and airway pressures.

The PTB rate, infant survival, and weight were also evaluated. Histological examinations of the infants' lungs, intestines, and brain were conducted. Rytvela treatment resulted in all fetuses being brought to term in the IL-1β model, whereas the untreated group had a PTB rate of 57%. Rytvela delivered 0.5 h post-inflammatory insults significantly enhanced pup survival, development, and weight (with a nearly twofold increase in litter survival). Histological examination demonstrated that all animals had protected morphogenesis of susceptible fetal organs, including maintained lung alveolarization, intact intestine villi integrity, and a protected cerebrovascular tree linked with preserved brain mass. However, the study concludes that Rytvela is effective in preventing PTB and FGR when delivered after inflammatory assaults. It was most effective when taken within 0.5 hours of IL-1β/LPS, but still had substantial fetal protective effects up to 6 hours later. Rytvela enhanced the delivery result by maintaining fetal tissue integrity and development. As a result, Rytvela represents a potential novel and safe therapeutic prototype for the treatment of PTB and FGR.

(Oliphant 2024) aimed to find the most effective amount of caffeine to prevent intermittent hypoxemia in late preterm newborns, as well as assess and synthesize the evidence for caffeine usage in preterm infants. However, late preterm newborns had a greater incidence of intermittent hypoxemia in the first weeks after delivery and worse long-term neurodevelopment than term-born babies. Caffeine lowers hypoxemia and improves outcomes in extremely preterm newborns. The study conducted a double-blind, five-arm, parallel, dose-finding randomized controlled experiment to determine the efficacy of oral caffeine citrate against placebo in decreasing intermittent hypoxemia. Following the creation of an adequate oral formulation, the study randomly assigned 132 late preterm babies to receive 5, 10, 15, or 20 mg.kg-1.day-1 caffeine citrate or placebo daily until term equivalent age, with intermittent hypoxemia as the primary outcome two weeks later. The study states that antenatal corticosteroids have been used since the 1970s to prevent respiratory distress in the newborn following preterm birth. It also addresses that an early study by Liggins and Howie reported a reduction in early neonatal mortality from 15% to 3.2% with betamethasone treatment, and a reduction in the incidence of RDS from 25.8% to 9% in preterm infants of less than 32 weeks gestation whose mothers received corticosteroids at least 24 hours prior to delivery (Liggins and Howie 1972), or from 14.4 % to 8.8% across all participants (Walters, Millwood et al. 2023). Finally, the authors conducted a systematic review and meta-analysis to formally evaluate the evidence supporting caffeine's use in treating apnea and preventing neurodevelopmental damage in preterm newborns.

Moreover, at two weeks post-randomization, caffeine citrate at dosages of 10 and 20 mg.kg-1.day-1 decreased intermittent hypoxemia compared to placebo, raised mean oxygen saturation (SpO_2), and reduced time with SpO_2 < 90%, with 20 mg.kg-1.day 1 being the most effective. No deleterious effects on growth velocity or sleep were seen at any dose; however, tachycardia increased at two weeks at all doses and remained at term in the 5, 10, and 20 mg.kg.day-1 groups. The systematic review includes fifteen studies (3,530 babies). Caffeine possibly reduced apnea (very low certainty evidence) and probably reduced bronchopulmonary dysplasia (moderate certainty evidence), with higher doses

probably more effective. Only one trial reported neurodevelopmental outcomes beyond early childhood, with moderate-certainty evidence indicating a probable lack of effect on neurocognitive impairment in early childhood but possible benefit on motor function in middle childhood. The study concludes that caffeine citrates 20 mg.kg-1.day-1 was the most effective treatment for intermittent hypoxemia in late preterm babies and was well tolerated. It also addresses that more study is needed to evaluate whether this dosage improves neurodevelopmental outcomes; if so, usage in this population might be quickly adopted to enhance results with a simple intervention that can be delivered outside of the hospital environment.

(Rutz, Eggel-Hort et al. 2021) addresses that the outcome of patients with congenital heart disease (CHD) has improved substantially over the last 40 years, with most patients living into adulthood. A large percentage of women with treated and unrepaired CHD lesions reach the age of procreation. These patients are more likely to experience maternal and fetal problems during pregnancy than the general population. Additionally, pregnant individuals with CHD are at significant risk for both thromboembolic events and bleeding problems. Anticoagulation medication during pregnancy with vitamin K antagonists (VKA) and low molecular weight heparin (LMWH) greatly enhances the already high risk of maternal and fetal adverse outcomes in these individuals. Patients with mechanical heart valve prosthesis implantation are at the greatest risk. This article discusses the unique cardiac, obstetric, and hemostasiologic characteristics of pregnant women with CHD and anticoagulation medication, as well as recommendations for follow-up and potential anticoagulation methods throughout pregnancy.

(Schedl 2023) states that preterm birth, defined as birth before 37 + 0 gestational weeks (GW), accounts for approximately 12% of all pregnancies globally and causes over one million fatalities annually. Thus, it significantly affects prenatal morbidity and death. To prevent preterm labor before 34 + 0 GW, the woman should be sent to a perinatal center and/or given corticosteroids until lung maturity is reached. Significantly, current recommendations advocate using oxytocin antagonists (atosiban), calcium antagonists (nifedipine), and COX inhibitors (indomethacin) for tocolysis. However, roughly 20% of women experience protracted labor following tocolysis, which can have a deleterious impact on infant morbidity and death. Maintaining tocolysis for 48 hours is crucial for preserving pregnancy throughout time in clinical practice. However, in this study, if the cervical length is between 15 - 30 mm, biochemical tests of the cervicovaginal secretions can be performed to estimate PTB in the next 7 days. In the case of a negative fibronectin test, close outpatient monitoring should be arranged if the cervix length is between 15 - 25 mm, whereas a positive test result with the same cervix length should result in inpatient admission for tocolysis and the administration of antenatal corticosteroids (ACS). The study concludes that this cross-sectional study on the use of initial tocolysis and maintenance tocolysis in Swiss maternity hospitals shows a clear discrepancy between the guideline-recommended treatment and the use in everyday clinical practice.

(Dempsey) highlights the importance of understanding the concept of pre-conceptual counseling and the opportunity that it provides. The study illustrates the significance of understanding the values of taking an obstetric history. Additionally, the study presents the value of understanding the key components of an obstetric examination. (Litman 2024) describes the key features from an obstetric point of view. It also describes the urgent action in the delivery room or soon afterward. The study also describes the key points relevant to postnatal management that need to be communicated by professionals involved in antenatal care.

(Cerritelli, Frasch et al. 2021) aims to review the development of the autonomic nervous system (ANS) during fetal and perinatal life, focusing particularly on the vagus nerve, to identify possible "critical windows" that could impact its maturation. The study states that the ANS's regulating capacity begins before birth since sympathetic and parasympathetic activity plays an important role in fetal development. Several studies have shown that the vagus nerve is involved in many vital processes during fetal, perinatal, and postnatal life, ranging from the regulation of inflammation via the anti-inflammatory cholinergic pathway, which may affect the functioning of each organ, to the production of hormones involved in bioenergetic metabolism. Furthermore, the vagus nerve has been identified as the principal afferent channel capable of sending information to the brain from all organs of the body.

The research describes "critical windows" that might assist doctors choose when to monitor fetuses in order to accurately assess the developmental state of both the ANS and, especially, the vagus nerve. Furthermore, this paper examines which factors (i.e., fetal characteristics and behaviors, maternal lifestyle and pathologies, placental health and dysfunction, labor, incubator conditions, and drug exposure) may influence the development of the vagus during the aforementioned "critical window" and how. This investigation might assist physicians and stakeholders in developing precise guidelines for improving the care of fetuses and infants, particularly to prevent the possible negative environmental effects on ANS development, which could have long-term repercussions.

(Watson 2021) demonstrates that the QUiPP Version 2 reliably identifies women with preterm labor symptoms who are at risk of delivery and may be safely comforted. The experiment conducted in this study demonstrated that the QUiPP decision-support software is acceptable

to physicians and suitable for UK maternity settings. The study found a high rate of noncompliance with UK premature labor guidelines. The low percentage of needless threatened preterm labor (TPTL) care in both EQUIPTT control and intervention sites suggests that quantitative fFn, with or without the QUiPP app, can accurately predict preterm birth in symptomatic women. Future versions of the QUiPP may include novel biomarkers such as host-defense peptides, microbiomes, and metabolites to improve prediction accuracy. QUiPP's full impact requires an implementation plan that handles the complexity of sPTB choices in real-life scenarios. The results of this research shows that of women who delivered infants before 36 weeks', 27.6% vs 20.5% received necessary antenatal corticosteroids (>24 h and and > 7 days) from delivery. Whilst the authors used a random-effects model to mitigate the heterogeneity of the study designs and tocolytics, variation in appropriate delivery of antenatal corticosteroids or in-utero transfer is not accounted for. In addition, beta-mimetics dominated these early trials, and this meta-analysis predates the use of nitrates or calcium-channel blockers as tocolytics.

(Hromadnikova, Kotlabova et al. 2021) states that preterm-born children have an elevated cardiovascular risk, with the first clinical manifestation occurring during childhood or adolescence. The methodology adopted in this paper addresses that the prevalence of overweight/obesity, prehypertension/hypertension, valve problems or heart defects, and postnatal microRNA expression profiles were investigated in preterm-born children aged 3 to 11 years who had undergone preterm pre-labor rupture of membranes (PPROM) or spontaneous PTB. The study was interested in the overall peripheral blood gene expression of 29 chosen microRNAs linked with cardiovascular disorders. The results obtained in this study show that almost one-third of preterm babies (32.43%) had valve issues and/or cardiac abnormalities. The prevalence of systolic and diastolic prehypertension/hypertension was likewise low in a sample of preterm-born children (27.03% and 18.92%). The great majority of children descended from either PPROM (85.45%) or PTB pregnancies (85.71%) had significantly changed microRNA expression patterns, with 90.0% specificity. The paper concludes that antenatal and early postnatal variables (gestational age at delivery, infant weight, and newborn condition at birth) had a substantial impact on postnatal microRNA expression patterns. The study states that the administration of tocolytic drugs, the administration of antenatal corticosteroids, and the administration of antibiotics to mothers at the time of preterm delivery had no impact on the postnatal microRNA expression profiles of preterm-born children. Likewise, the mode of delivery (vaginal or cesarean birth) had no influence on the postnatal microRNA expression profiles of preterm-born children. These findings may help to explain why preterm babies have a higher risk of developing cardiovascular disease. These data significantly support the view that preterm infants should be in dispensaries for an extended period to get specialized medical care.

6. WHO has issued new guidelines to enhance the health of preterm newborns

The World Health Organization (WHO) has provided updates to two initiatives aimed at improving the health outcomes of newborn kids. One set of guidelines addresses the use of prenatal corticosteroids. These medications cross the placenta and improve the morphological maturity of the fetus' developing lungs, therefore reducing respiratory-related morbidity and death in preterm babies (Organization 2022).

This recommendation (and its nine sub-recommendations) clears up past uncertainty concerning the evidence supporting their usage in low-resource settings. Clinical investigations in high-resource countries found that prenatal corticosteroids were both safe and advantageous to neonatal outcomes. The antenatal corticosteroids trial in low-income countries, on the other hand, discovered a considerable increase in perinatal fatalities (5 more deaths per 1000 women treated with the medication) and maternal illnesses. A following experiment (WHO ACTION-1) in lower-income countries discovered that, given the correct settings, prenatal corticosteroids are both safe and effective.

Another new WHO recommendation issued recently concerns the use of tocolytic therapies. Tocolytic medicines reduce uterine contractions and can be used to postpone premature labor and extend pregnancy. This offers several advantages, including extra time for fetal growth and providing prenatal corticosteroids. It also provides a window of opportunity for women to be moved to a higher level of care, if necessary. These recommendations give clear direction to health professionals on managing preterm delivery and have the potential to enhance the health of newborn newborns, especially in low-resource settings.

Tocolytic therapies (acute and maintenance) were not recommended in 2015. WHO recommendations on interventions to enhance preterm birth outcomes due to a lack of data indicating significant advantages. A review of the data in 2022, however, approved nifedipine for acute and maintenance tocolytic treatment for women with a high risk of preterm delivery, if specific circumstances are satisfied. In developing these recommendations, WHO considered cost-effectiveness, feasibility and resources, equity, and whether the intervention was valued and acceptable by stakeholders such as clinicians, women, and their families.

7. CONCLUSION

Antenatal corticosteroids are a very successful hospital-based strategy for reducing neonatal death from preterm birth, which is a primary cause of childhood mortality. National and international health organizations strongly

urge using prenatal corticosteroids in hospitals for women at high risk of premature delivery. Antenatal corticosteroids are on the UN list of life-saving commodities for women and children, while WHO recommends dexamethasone for women at risk of premature delivery.

Low-income nations have significant challenges to adequate prenatal corticosteroid coverage. In these contexts, estimating gestational age might be challenging due to limited ultrasound availability, confusion regarding the last menstrual cycle date, and poor training in the evaluation process.15-18 Birth attendants in low-resource settings may lack the essential expertise to assess preterm birth risk and properly provide prenatal corticosteroids, despite being permitted by health authorities.

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