New WHO recommendations to improve the outcomes of preterm birth

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An estimated 15 million babies are born preterm annually.[1] Preterm birth complications account for more than 15% of deaths in children younger than 5 years[2] and survivors often have long-term consequences with respect to their health, growth, and psychosocial functioning.[3,4] The most beneficial interventions available are those that improve newborn outcomes when preterm birth is inevitable (tertiary interventions) and those that focus on special care for preterm newborns. Today WHO publishes new recommendations on interventions for pregnant women in whom preterm birth is imminent (including antenatal corticosteroids, tocolytics, magnesium sulfate, antibiotics, and mode of delivery) and for care of preterm neonates (including thermal care, continuous positive airway pressure [CPAP], surfactant administration, and oxygen therapy) to improve preterm birth outcomes.[5]

Although there is strong evidence of benefit from trials after administration of antenatal corticosteroids, most of these were conducted in high-income countries, in higher-level facilities where the accuracy of gestational age estimation was high, and comprehensive maternal and newborn care was likely to be available. The recent Antenatal Corticosteroids Trial[6] has raised concerns about extending antenatal corticosteroid use to peripheral levels of the health system in lower-income countries. The WHO Guideline Development Group therefore took a cautious approach, recommending that certain preconditions are met before antenatal corticosteroid administration, on the basis of the context of the existing trials. The guidelines therefore recommend antenatal corticosteroid therapy for women at risk of preterm birth from 24 weeks to 34 weeks of gestation when the following conditions are met: (1) gestational age can be accurately assessed, (2) preterm birth is considered imminent, (3) there is no clinical evidence of maternal infection, (4) adequate childbirth care is available, and (5) the preterm neonate can receive adequate care for complications, if needed (including resuscitation, thermal care, feeding support, infection treatment, and safe oxygen use).

Accurate and standardised gestational age assessment (ideally, by first trimester ultrasonography) is important to ensure all eligible mothers receive antenatal corticosteroids while avoiding unnecessary treatment for those not in the targeted gestational age range. Antenatal corticosteroids should not be routinely administered in situations where the gestational age cannot be confirmed (particularly when suspected to be more than 34 weeks) because risks of harm could outweigh benefits if matured babies are exposed to corticosteroids in utero. Nevertheless, it is crucial that every preterm neonate receives prompt and comprehensive care to prevent or mitigate complications.

The guidelines also recommend antenatal corticosteroid use in singleton and multiple pregnancies, preterm prelabour rupture of membranes where there are no clinical signs of infection, and in women with hypertensive disorders, diabetes, and growth-restricted fetuses. Although the evidence regarding antenatal corticosteroid use and exacerbation of maternal infectious morbidity is not entirely conclusive, the biological plausibility of such a relation cannot be ignored, particularly in settings where appropriate supportive care cannot be guaranteed. Antenatal corticosteroid use is therefore not recommended for women with chorioamnionitis.

WHO acknowledges that it might not be feasible to operationalise all preconditions for antenatal corticosteroid use in a standard and consistent manner across resource-limited settings. Further research on the efficacy of antenatal corticosteroids in facility settings in lower-income countries is urgently needed to identify the most essential (or minimum) preconditions to safely achieve clinical benefits from antenatal corticosteroids.

Existing trials have shown that tocolytics can delay preterm birth by 2–7 days; however, there is limited evidence that they affect substantive perinatal outcomes, and they could have adverse effects on the mother.[5] Consequently, the guidelines do not recommend their use for the purpose of improving newborn outcomes. If tocolytics are used (ie, to facilitate antenatal corticosteroid administration or in-utero fetal transfer to a special care setting), nifedipine is the preferred agent. WHO considers studies on tocolytics for improving critical neonatal outcomes a research priority.

Preterm babies are at risk of respiratory complications, and commonly have difficulties in feeding and in maintaining temperature. Kangaroo mother care—a relatively low-cost intervention—is recommended for the routine care of babies weighing 2000 g or less in health facilities, as soon as they are clinically stable. Key features include early, continuous, and prolonged skin-to-skin contact between mother and baby, as well as exclusive breastfeeding or breastmilk feeding. It is recommended that kangaroo mother care be as continuous as possible. Although this might be challenging, even intermittent kangaroo mother care is beneficial and preferred to conventional thermal care. Preterm babies who are not eligible or cannot receive kangaroo mother care should be cared for in a thermoneutral environment under radiant warmers or in incubators. There is insufficient evidence to recommend the use of plastic bags or wraps for routine thermal care; however, they could be beneficial in preventing hypothermia during stabilisation or transfer of the neonate to specialised neonatal care units.

CPAP, and in appropriate settings surfactant replacement therapy, is recommended for preterm neonates diagnosed with respiratory distress syndrome and they should be initiated as soon as the diagnosis is made. Surfactant replacement therapy should only be administered in facilities where intubation, ventilator care, blood gas analysis, newborn nursing care, and monitoring are available. Prophylactic use of surfactants is not recommended.

Appropriate oxygen therapy is crucial when preterm neonates require ventilation for resuscitation immediately after birth. Recognising the harms of using high concentrations of oxygen in preterm babies younger than 32 weeks' gestation, the guidelines recommend that ventilation should be initiated with 30% oxygen, and carefully increased only if bradycardia continues or targeted oxygen saturation concentrations are not reached despite adequate ventilation. 100% oxygen should never be used—resuscitation with room air should be done if blending air–oxygen is impossible.

WHO acknowledges that improving the outcomes of preterm neonates remains a challenging task. Health providers and health systems need to be equipped to reliably assess gestational age, recognise the signs of preterm labour, provide prompt and effective newborn care, and use interventions safely and appropriately while minimising harm. The recommendations highlight key evidence gaps, particularly related to the use of antenatal corticosteroids and tocolytics in resource-limited settings. Further trials of these interventions are urgently required.

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