Administration of Antenatal Corticosteroids in Pre-Term Labour

July, 2015
# TABLE OF CONTENTS

I. FOREWORD .................................................................................................................. 3

II. ACKNOWLEDGEMENT .............................................................................................. 5

1. BACKGROUND .......................................................................................................... 6
   - Causes of Neonatal Deaths ................................................................................ 6
   - Risks/ Causes of Preterm Labour/Birth ............................................................... 7
   - Complications of Preterm Delivery ...................................................................... 7

2. ANTENATAL CORTICOSTEROIDS .............................................................................. 8
   - Level of Care to Use Antenatal Corticosteroids .................................................. 8
   - Type of Corticosteroids to be Used ..................................................................... 8
   - Who should receive antenatal corticosteroids? .................................................... 9
   - Dose for Antenatal Corticosteroids: ................................................................. 9
   - Precautions when Administering Antenatal Corticosteroids: ............................. 9

3. MONITORING AND EVALUATION FOR ACS USE ................................................. 10

4. REFERENCES: ............................................................................................................ 11
I. Foreword

Tanzania has made recommendable progress in reducing underfive mortality rate to 54 per 1000 live births putting it in a group of sub-Saharan countries which have attained MDG 4 target. However, this is not the case for newborn where each year approximately 50,000 babies are born stillbirths and half of them dying during labour, at birth and neonatal period. Last year Tanzania countdown reports has demonstrated that newborn mortality contributes to almost 40% of all underfive mortality.

The main causes of all newborn deaths are mainly three, which are prematurity, birth asphyxia and newborn sepsis. These complications may effectively be managed through correct management of labour, giving birth and postpartum using the skilled birth attendant, effective infection prevention and control, and the use of injection antibiotics Newborn deaths. It should also emphasized that skills in Helping Baby to Breath in Tanzania, which was one of the 7-Basic EmONC signal function has contributed a lot in the reduction of newborn deaths as a result of asphyxia. Use of Antenatal corticosteroids for baby born prematurely has proven to be effective in prevention asphyxia and brain damage, therefore reduce newborn deaths.

In an effort to improve the quality and availability of newborn care in Tanzania, the Reproductive and Child Health Section of the Ministry of Health and Social Welfare in collaboration with development partners developed Administration of Antenatal Corticosteroids in Preterm Labour Guideline to address the need for the country to reduce newborn mortality as a result of “born too soon”. This Guideline is intended to serve as a training manual and reference tool to health care providers. This tool will enhance maternity care providers’ ability to diagnose, manage and refer mothers with likelihood to deliver prematurely and other related
indication of Antenatal corticosteroids use. This Guideline may be used by doctors, clinical officers, nurses and other health professionals responsible for providing care at the dispensary, health centre and hospital to help them to make appropriate decision. The book may also be used for both pre- and in-service training.

I recommend this Guideline to be a standard tool at all public, voluntary agency and private health facilities to ensure uniformity in providing quality services.

Dr. Donan W. Mmbando
PERMANENT SECRETARY
II. Acknowledgement

The Ministry of Health and Social Welfare wishes to acknowledge with sincere gratitude all those who in one way or another contributed to the development and production of this Administration of Antenatal Corticosteroids in Preterm Labour Guideline. The Ministry would like to convey special thank to UN Commission for Life Saving Commodity under UNFPA for the financial support throughout the review process. The Ministry is also grateful to the following organizations for the contribution to finalize this manual; The Reproductive and Child Health Section for guiding the process by preparing the draft document for the review and guiding the process to its final stage. Other organizations include Muhimbili University College of Health Sciences, Association of Gynaecologist Obstetrician Tanzania (AGOTA), Tanzania Midwives Association (TAMA), Prime Minister Office Regional Administration and Local Government, Muhimbili National Hospital, Jhpiego and Evidence for Action for providing technical assistance.

The Ministry would like to thank the following for their commitment and participation in the review of this guideline: Dr. Koheleth Winani (MOHSW), the lead of the process and Dr. Ahmad Makuwani (MOHSW/EAC), for preparing a draft zero. The Review team included Dr. Freddy Mtatifikolo (Bombo Hospital, Tanga), Ms. Amina Omari (MNH/TAMA), Dr. Nathanael Mtinangi (MNH/AGOTA), Dr. Dunstan Bishanga (Jhpiego), Ms. Epiphania Malingumu (MOHSW), Dr. Moke Magoma (MOHSW), Dr. Tarimo Vincent (MNH/AGOTA) and Ms. Mary A. Mangenya (MOHSW).

Dr. Margaret Mhando
Acting Chief Medical Officer
1. Background

Tanzania has made remarkable progress in under-five survival and has reached the MDG4 target of reducing child mortality rate by two thirds from the 1990 levels by 2015. Under-five mortality rate declined from approximately 166 to 54 per 1,000 live births by 2012. However, similar progress has not been recorded in newborn survival. Neonatal mortality rate declined from 43 to 21 deaths per 1,000 live births and as a result newborn deaths now account for up to 40% of all deaths in under-five children in the country (Unicef 2013, UN 2013, Lancet 2015). Prematurity-related complications account for the highest number of newborn deaths worldwide (The Lancet, 2012).

Every year, about 213,500 babies are born prematurely in Tanzania equivalent to 11.4% of all live births and making Tanzania the 12th country in the world in the number of premature babies (The Lancet 2012&2015). Furthermore, of the approximately 39,000 reported annual newborn deaths in the country, 9,400 deaths (24%) are due to prematurity (Lancet 2012).

Causes of neonatal death

At least one third of under-five deaths occur during the first 28 days of life (neonatal period) (Oza et al, 2014). The major factors contributing to more than 75% of neonatal deaths are mainly three conditions: preterm birth complications, birth asphyxia and sepsis (Lawn et al, 2014). Nevertheless, more than three quarters of prematurity related deaths could be averted with the right care before, during and after delivery; largely using simple and cost effective interventions.
(Save the Children and WHO, 2012). Therefore, addressing prematurity-related complications and deaths is key to newborn survival in the country.

**Risks/ causes of preterm labour/birth**

There are several risks/causes that may lead to premature labour/birth, these include:
1. Pre-term induction of labour such as in severe pre-eclampsia/eclampsia.
2. Iatrogenic or spontaneous pre-term rupture of membranes.
3. Ante partum haemorrhage.
4. Multiple pregnancies/polyhydromnious.
5. Women with glucose intolerance or diabetes mellitus.

**Complications of preterm delivery**

Evidence shows that Preterm birth and complications arising from preterm birth are the leading cause of newborn deaths and disability among the newborn. Some of the complications associated with pre term birth include:
1. Respiratory Distress Syndrome (RDS).
2. Intra-ventricular haemorrhage.
3. Necrotizing enterocolitis.
4. Systemic infections.
5. Haemorrhagic disease of a newborn.

Of babies born preterm that there is life long health challenges, such as neurological deficits, impaired learning ability, chronic lung disease and delayed milestones.

There are different ways of addressing preterm labour and
births and related complications. However, these guidelines are only intended to act as a guide for use of ACS in addressing complications related to premature birth. The guidelines aim to define levels of care where ACSs can be used and streamline the use in the country.

2. **Antenatal Corticosteroids**

Before these guidelines, Tanzania had never had national guidelines for ACS use for prevention of prematurity-related complications although ACSs have been used at various levels of service provision guided by knowledge of clinicians.

Antenatal corticosteroids are effective reducing the incidence RDS, intraventricular haemorrhage and necrotizing colitis (Cochrane, 2009). Preterm babies do not have enough surfactant in their lungs: surfactant helps the lungs expand during breathing, and therefore commonly develop RDS. By giving corticosteroids to the mother 48 hours before a baby’s birth, the steroids will speed fetal lung maturity by helping the fetus produce more natural surfactant and therefore be less likely to develop severe RDS. ACS has also been shown to have a protective effect on the cerebral blood vessels, thus reducing intraventricular hemorrhage, and on the intestines, thus reducing necrotizing enterocolitis.

**Level of care to use antenatal corticosteroids**

In Tanzania, antenatal corticosteroids may be safely used at a hospital level. If a woman with premature labour presents in a health facility other than a hospital such as dispensary or health centre, she should be given a first dose of ACS and then be referred to the hospital.

**Type of corticosteroids to be used**

The antenatal corticosteroid of choice is intramuscular dexamethasone. However, if available, intramuscular
betamethasone may also be used.

**Who should receive antenatal corticosteroids?**

ACS shall be given to all women at risk of preterm birth from any cause from 28 to 34 weeks of gestation. However, by a specialist opinion in a well equipped health facility, ACS may be given at a gestation age as low as 24 weeks.

**Dose for antenatal corticosteroids:**

<table>
<thead>
<tr>
<th>Dexamethasone 6 mg intramuscularly every 12 hourly to a total of 4-doses.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Betamethasone 12mg injection given every 24 hours (once a day) to a total of 2 doses.</td>
</tr>
</tbody>
</table>

Sources: Miracle et al., Guideline for the use of antenatal corticosteroids for fetal maturation and RCOG GTG 7

**Precautions when administering antenatal corticosteroids:**

Antenatal corticosteroids are immunosuppressive medicines. For this reason these medicines need to specially manage in situation of:

1. Any form of obstetric sepsis such as chorioamnionitis.
2. In existence of systemic infections such as TB and others.
3. In diabetes mellitus where adjustment of insulin dose vs administration of ACS is required.
3. **Monitoring and Evaluation for ACS use**

The implementation progress of the guidelines will be made using three indicators applicable at the council, regional and national levels.

1. **Proportion (%) of hospitals providing ACS:**
   - Numerator: No. of hospital providing ACS.
   - Denominator: All hospitals.

2. **Proportion (%) of women with premature birth who received ACS at 28 and 34 weeks gestation:**
   - Numerator: No. of women with premature birth who received ACS.
   - Denominator: All women delivered with premature birth.

3. **Proportion (%) of pregnant women who delivered at 24-27 weeks who received ACS:**
   - Numerator: No. of women who delivered at 24-27 weeks and received ACS.
   - Denominator: All women delivered at 24-27 weeks.
4. References:


7. Save the Children and WHO, 2012


10. Antenatal Corticosteroids to Reduce Neonatal Morbidity and Mortality. Green top Guideline 7 (GTG7), Royal College of Obstetrics and Gynecology (RCOG), UK.