THE REPUBLIC OF UGANDA
**MINISTRY OF HEALTH**

# TREATMENT OF APNOEA OF PREMATURITY USING CAFFEINE CITRATE ALGORITHM

**Preterm Infant Eligible for Caffeine Citrate Treatment of AOP:**
Preterm infants < 34 weeks GA, and birth weight less than 1.5 kg with Apnoea of Prematurity i.e. Cessation of breathing for ≥ 20 seconds OR a shorter respiratory pause accompanied by desaturation ($SPO_2$ < 90%), central cyanosis and bradycardia (< 100 b/m)

**Initial Neonatal Resuscitation:**
1. Ensure safety, **stimulate the neonate**, call for **HELP!** Place neonate in resuscitation area.
2. **Airway** - Clear airway and position
3. **Breathing** - Look, Listen, and Feel, if not breathing, start bag and mask ventilation till the baby has adequate ventilation of more than 30 breaths/min. Initiate/continue bCPAP
4. **Circulation** - Check heart rate, Capillary Refill and Palor
5. **Disability** - Check blood sugar, convulsions, and tone
6. **Start cardiorespiratory monitoring** - Check pulse rate, respiratory rate, SPO2 (Target $SPO_2$ [90%- 95%], Temperature (36.5°C -37.5°C)

**Identify and treat underlying causes** that may be causing the apneic attacks e.g. hypoglycemia, hypothermia, sepsis, intraventricular hemorrhage, etc.)

**AND**

*** Give caffeine citrate loading dose:**
For newborns **WITHOUT** contraindications on trophic or enteral feeds: **Give oral caffeine citrate 20mg/kg loading dose** with EBM.

** For newborns **WITH** contraindications to trophic or enteral feeds: **Give IV caffeine citrate 20mg/kg loading dose as an infusion** over at least 30 minutes.

**Any other Apnoeic Occurrence?**

**NO**

- **Give maintenance dose: Oral caffeine citrate 5mg/kg/24 hourly** via nasal/oral gastric tube. The dose is to coincide with the next treatment schedule (not more than 24 hours after the loading dose) and then every 24 hours thereafter.
- **If not safe to give trophic or enteral feeds,** give a maintenance dose of IV caffeine citrate 5mg/kg/24 hours as an infusion over 10 minutes. Monitor HR. withhold dose if HR >180bpm at rest

**NO** Apnoea Occurrence

- Continue caffeine citrate until the newborn is **34 weeks** of corrected gestational age. (For those<34 weeks at the time of initiation of treatment)
- Adjust caffeine citrate dose weekly based on weight
- Stop caffeine citrate if no apnoea is recorded in the preceding 5 days
- Continue vital sign monitoring for **5 days after stopping caffeine citrate**

**YES**

Apnoeic Occurrence while on the **correct dose of caffeine citrate**

**Identify and treat underlying causes that** may be causing the apneic attacks e.g. sepsis, hypoglycemia, hypothermia, and other causes of apnoea.

**NO**

Apnoeic Occurrence while on the **correct dose of caffeine citrate**

**Refer Immediately for specialized care** including intubation and initiation of mechanical ventilation

- *For newborns >34 weeks corrected gestational age at the time of initiation of treatment, stop caffeine citrate if no apnoea is recorded in the preceding 5 days.*
- *Other causes of apnoea include airway obstruction, sepsis, seizures, anemia, hypoglycemia, hypothermia, intraventricular hemorrhage, etc., Escalate care if apnoea persists despite appropriate intervention.*
- ***Caffeine citrate should **NOT** be given to newborns with kernicterus or symptomatic heart disease esp. arrhythmia. **Caution** for newborns with renal or hepatic disease seizures.*
- *Withhold caffeine citrate, if the heart rate is persistently over 180 beats/ minute at rest.*
- *Caffeine citrate is compatible with breast milk.*
- *For caffeine citrate vials, dilute as per the manufacturer's instructions. Once opened, use immediately and discard the unused portion*
- ***Adjust the dose of caffeine citrate weekly,** (on a fixed day), based on the change in body weight*
- *****Contraindications to enteral feeding,** surgical complications such as; tracheal-esophageal fistula, necrotizing enterocolitis, and intestinal obstruction.*
- ****** Clinician may continue with caffeine citrate 5mg/kg if the apnoea episode is associated with hypoglycemia or hypothermia***