

Doc N° 3  
Box N 27.01

**ព្រះរាជាណាចក្រកម្ពុជា**  
**ក្រសួងសុខាភិបាល**  
**Kingdom of Cambodia**  
**Ministry of Health**



# **Clinical and Therapeutic Guideline Referral Hospitals**

**For use by the Medical Doctors in Referral Hospitals**



**Second Edition**  
**November 1999**



## Chapter 19

**BERIBERI - VITAMIN B1 DEFICIENCY**

Beriberi or vitamin B1 deficiency is mostly secondary to insufficient dietary intake of the vitamin B1. It is more likely to occur in individuals with an increased requirement for vitamin B1 - pregnant or lactating women, patients with fever, stress period... Foods with high vitamin B1 content are: milk, cereals (rice), vegetables, fruits, liver, meat, eggs... Unpolished rice (brown) has a high vitamin B1 content. Chronic alcoholism is a predisposing factor.

**Clinical Signs****Infant - acute form (cardiac)**

Emergency  
Diagnosis is difficult, always think about it.

Infant 1-4 months old (sometimes a little bit older)  
Usually breast-fed (check mother for paresis, paresthesia)  
Often, after a banal upper respiratory infection (cold) or malaria.  
Anorexia (poor feeding) and vomiting  
Insomnia and restlessness

- pallor
- no fever or low grade fever
- fast breathing (High Respiratory Rate)
- tachycardia
- lungs auscultation: initially normal, rales at later stage
- hepatomegaly
- oliguria, puffy face (mild oedema)
- jugular veins slightly distended
- sometimes with mild meningeal signs

Evolution towards shock with pulmonary oedema and death if not treated quickly  
Differential diagnosis: Severe bacterial infection (sepsis) with metabolic acidosis  
Severe malaria

Haemoglobin and haematocrit: normal value.

Diagnosis is confirmed by treatment: dramatic and spectacular improvement (diuresis, RR, pulse)

**Infant - sub-acute form (pseudo meningeal and/or aphonia)**

- Older infants (5 to 12 months)
- Dyspnea, cough and aphonia ((hoarse cry).
- Restlessness, insomnia, poor feeding
- Drowsiness / meningeal signs / Often nystagmus / Sometimes mydriasis / Sometimes bulging fontanel
- Oliguria

CSF is normal

Diagnosis is confirmed by treatment: clinical improvement within a few days



Adults and older children**Clinical presentation is more typical**Wet Beriberi or cardiac Beriberi (acute form)

- Cardiac failure which does not respond to classical treatment.
- At initial stage, wide blood pressure with large differential (Systolic - Diastolic)
- Dyspnea / tachycardia / oedema
- X-ray: Cardiac size normal at first stage. Cardiomegaly at later stage

Dry beriberi or polyneuritis (sub-acute or chronic form)

- Polyneuritis: symmetric with sensitive and motor deficit
- Distal paresthesia and paresis (walking difficulties)
- Evolution towards flaccid paralysis with muscular atrophy and sensitive deficit
- Osteo-tendinous reflex: weak or absent

Cerebral form (Encephalopathy Gayet-Wernicke)

- vomiting
- nystagmus
- fever
- ataxia, confusion or coma

Diagnosis is clinical and therapeutic response.

**Treatment**

Indication of parenteral Thiamine (IM or Slow IV):

- Infant acute and subacute form
- Acute cardiac form (adults and older children)
- Acute cerebral form (adults and older children)

Intravenous injection of thiamine may be dangerous: shock (? anaphylactic reaction)

- Respect dosage (particularly with infants) and inject slowly.
- Switch to thiamine PO as soon as it is possible

Infant acute form

1. Day 1: Dilute 1 ml of thiamine (vial 1 ml - 100 mg) with 9 ml of water for injection. Inject 1 ml of this diluted solution (10-mg thiamine) by slow IV. Repeat after 30 minutes. Then, give 25 mg by IM to complete the first day treatment. If IV access is not possible, give 50 mg/day by IM divided in 2 injections over the first 24 hours.
2. Day 2: It is usually possible to switch to PO treatment:
  - If the infant is breast-fed: treat the mother with thiamine PO 100 mg/day for 1 month.
  - If the child has been weaned: treat the child: with thiamine PO 10 mg/day for 1 month.

inj IV 10 } Day  
mg thiamine }  
then 25 IM #1  
OR  
50 mg  
IM in  
2 injections  
Mom 100 mg/day  
for 1 mo  
child 10 mg/day

Infant subacute form

1. Day 1: Give thiamine 50 mg/day IM divided in 2 injections over the first 24 hours.
2. Day 2: It is usually possible to switch to PO treatment:
  - If the infant is breast-fed: treat the mother with thiamine PO 100 mg/day for 1 month.
  - If the child has been weaned: treat the child: with thiamine PO 10 mg/day for 1 month.

Acute Cardiac and cerebral form (Adult and older children)

1. Day 1: Give thiamine (IM or slow IV) 50 mg 2 to 3 times over the first 24 hours.
2. Day 2: It is usually possible to switch to PO treatment:  
Thiamine PO 100 mg/day for 1 month

Polyneuritis (Adult and older children):

1. Give thiamine PO 100 mg/day for 1 month.

In all cases, treat associated malnutrition and deficiencies (iron, folic acid, and other vitamins)

**Prevention:** Nutritional education about high content food (liver, brown rice, green leaves, and potatoes).

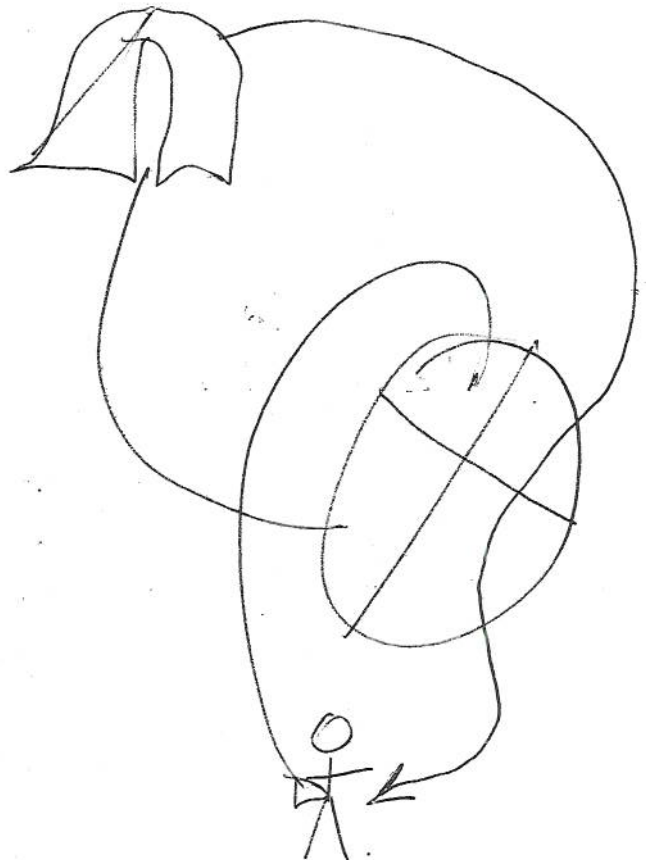
mouse

Mouse

47-52

Local Disc C  
Debra Coates  
Role of NP

- Sink
- Toilet
- Chest tube
- Enceph
- Tapeworm
- Tumor face
- TB
- Mines
- Centipede - Miriam F
- Leech
- Coming
- Tape
- Leprosy
- Kwashiorkor } poverty
- Shins PP
- Wires
- Truck - mud
- Moto on truck
- Moto + chickens
- Traps
- Mountain
- Well Saer



Rain - Buddha  
Drums, megaphone  
End