

## Breastfeeding and Maternal Tuberculosis

*A statement prepared jointly by the Division of Child Health and Development (CHD), the Global Tuberculosis Programme (GTB), the Global Programme for Vaccines and Immunization (GPV), and Reproductive Health (Technical Support) (RHT), of the World Health Organization.*

Health workers are often asked to advise mothers with tuberculosis about whether it is safe to breastfeed. In the past, infants were sometimes separated from their mothers, at least until their mothers became non-infectious. Separation made breastfeeding and care by the natural mother impossible, and put infants at risk of infection and malnutrition caused by artificial feeding. These measures are no longer recommended.

The policy of the Global Programme for Vaccines and Immunization<sup>4</sup> for infants in situations where they are at risk of infection with *M. tuberculosis* is to immunize with BCG as soon after birth as possible. Although studies have shown varying levels of protection afforded by BCG against infection by TB of all forms, there is general agreement that immunization in the first year of life protects against tuberculous meningitis and miliary tuberculosis.

The basic recommendations from GPV on administration of BCG is unchanged. Infants at risk from tuberculosis should receive BCG vaccine as soon after birth as possible. Two exceptions to this already exist - infants who have become symptomatic for yellow fever or HIV infection should not be given BCG.

This document identifies one group needing special recommendations - infants whose mothers develop infectious (smear or culture positive) pulmonary tuberculosis shortly before or shortly after delivery. These infants will not be protected in time by BCG. BCG is not contraindicated in these infants, but

they will need immunizing later, or re-immunizing.

Current recommendations for TB infected mothers are based on the following principles:

- The best way to prevent infection in infants of infected mothers is timely and properly administered chemotherapy for the mother.
- Mothers can breastfeed - exclusively for a minimum of 4 months and, provided the infant is growing satisfactorily, for 6 months; and they should continue breastfeeding with adequate complementary food up to 2 years or beyond.

In parts of the world where both HIV infection and tuberculosis are common, the principles of tuberculosis control are the same. However, the recommendation for breastfeeding may need modification according to the Joint United Nations Programme on HIV/AIDS (UNAIDS) Statement on HIV and infant feeding<sup>5</sup>.

### **Chemotherapy for the mother**

In any situation, the mother should receive a full course of chemotherapy using the standard short course regimen recommended in the national tuberculosis programme, and monitored by the nearest health facility<sup>1,2</sup>.

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Standard short course regimens combine the 4 drugs: isoniazid, rifampicin, pyrazinamide and ethambutol during the first 2 months, and continued treatment for 4 or 6 months with selected drugs. Smear positive

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(infectious) patients normally become smear negative (non-infectious) within 2 months.

These anti-tuberculosis drugs are not dangerous during pregnancy and are compatible with breastfeeding. The amounts of the drugs excreted in breastmilk are very small, and insufficient to kill BCG vaccine.

### ***Preventive chemotherapy for the infant***

Infants at risk of infection from their mothers should be given isoniazid 5mg/kg once daily orally for 6 months. This dose of isoniazid is large enough to kill BCG vaccine.

### ***Recommendations for management of mother and infant***

#### ■ General management:

- the mother and infant should stay together; the infant should be breastfed in the normal way.

#### ■ Specific management in different situations:

1. If the mother is diagnosed as having active pulmonary tuberculosis and has started treatment 2 months or more before delivery, she should have 2 sputum smears examined microscopically to ensure that she is smear negative and non-infectious before the infant is born.

If the mother is sputum smear negative just before delivery:

- continue anti-tuberculosis treatment for the mother;
- advise her to breastfeed normally;
- immunize the infant with BCG as soon as possible after birth.

Preventive chemotherapy is not recommended for the infant.

If the mother is sputum smear positive just before delivery:

- refer her to the nearest health centre or district hospital for evaluation of tuberculosis treatment;
- advise her to breastfeed normally;
- give the infant preventive chemotherapy with isoniazid for 6 months;

- immunize the infant with BCG after stopping isoniazid.

2. If the mother is diagnosed as having active pulmonary tuberculosis and has started treatment less than 2 months before delivery, she is still potentially infectious when the infant is born. The infant will not be protected for some weeks by BCG so needs preventive chemotherapy:

- continue anti-tuberculosis treatment for the mother;
- advise her to breastfeed normally;
- give the infant preventive chemotherapy for 6 months;
- immunize or re-immunize the infant with BCG after stopping isoniazid.

If BCG is given at birth because the status of the mother was unknown, or by mistake, it is not harmful, but the vaccine will be killed by the isoniazid given to the infant, and will not be protective. BCG immunization must be repeated after stopping isoniazid.

3. If the mother is diagnosed as having active pulmonary tuberculosis less than 2 months after delivery, immunization with BCG at birth will not give the infant adequate protection. The vaccine will be killed by preventive chemotherapy:

- give the mother anti-tuberculosis treatment;
- advise her to continue breastfeeding;
- give the infant preventive chemotherapy with isoniazid for 6 months;
- immunize or re-immunize with BCG after stopping isoniazid.

4. If the mother is diagnosed as having active pulmonary tuberculosis 2 months or more after delivery:

- give the mother anti-tuberculosis treatment;
- advise her to continue breastfeeding;
- give the infant preventive chemotherapy with isoniazid for 6 months.

If BCG vaccine was given at birth, the infant is protected:

- it is not useful to re-immunize when preventive chemotherapy is completed;
- monitor the infant's weight gain and health.

If BCG vaccine was not given previously, the infant is not protected:

- immunize with BCG when preventive chemotherapy is completed;
- monitor the infant's weight gain and health.

### **Monitoring the infant's weight gain and health**

If at any time during the first year of life, an infant develops signs or symptoms which might suggest tuberculosis<sup>3</sup>, especially:

- weight loss
- fever
- persistent cough
- difficulty breathing
- vomiting
- agitation or apathy
- excessive or abnormal crying

⇒ refer the child immediately to the nearest health centre or district hospital for further investigations:

- medical examination is needed, including chest X-ray, and CSF examination (to identify potential pulmonary or extra pulmonary tuberculosis), and sometimes a tuberculin test;
- if TB infection is confirmed, specific treatment will be required using the standard chemotherapy regimen recommended in the national tuberculosis programme.

⇒ advise the mother to continue breastfeeding:

- if the infant is hospitalized, admit the mother as well so that breastfeeding can continue;
- if the infant is unable to suckle, feed him/her with the mother's expressed breastmilk using a cup.

⇒ if the signs and symptoms are not related to tuberculosis or HIV infection, immunize the infant with BCG (if not already done).

## **Breastfeeding and Maternal Tuberculosis Summary of Management**

*(according to the time of diagnosis and bacteriological status of the mother)*

Active pulmonary TB diagnosed before delivery		Active pulmonary TB diagnosed after delivery		
> 2 months before		< 2 months before	< 2 months after	> 2 months after
Smear negative just before delivery	Smear positive just before delivery	-	-	-
Treat mother	Treat mother	Treat mother	Treat mother	Treat mother
Breastfeed	Breastfeed	Breastfeed	Breastfeed	Breastfeed
No preventive chemotherapy for infant	Give isoniazid to infant for 6 months	Give isoniazid to infant for 6 months	Give isoniazid to infant for 6 months	Give isoniazid to infant for 6 months
BCG at birth	BCG after stopping isoniazid	BCG after stopping isoniazid	BCG after stopping isoniazid	If BCG not given at birth, give after stopping isoniazid

Monitor all infants for weight gain and health

Do not give BCG to infants who are symptomatic for yellow fever or HIV infection

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1. *Treatment of tuberculosis: guidelines for national programmes*. WHO, 1993.
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3. Pierre Chaulet and collaborators. *Childhood Tuberculosis, still with us...* Children in the Tropics, 1992 - No 196-197. International Children's Centre, Chateau de Longchamp, 75016 Paris, France.
4. *Immunization Policy*. Global Programme for Vaccines and Immunization, WHO, Geneva. WHO/EPI/GEN/95.03 (Rev. 1).
5. *HIV and Infant Feeding*. A Policy Statement Developed Collaboratively by UNAIDS, WHO and UNICEF, May 1997. (Document number UNAIDS 97.1).

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