Annex 2b. Standard for preventive treatment and care of congenital syphilis in the newborn

The standard
All asymptomatic infants born to seropositive women should receive at birth a prophylactic single dose of benzathine penicillin. Newborn infants showing any clinical sign of congenital syphilis should be treated with penicillin crystalline or procaine for 10 days. Any suspected case of congenital syphilis should be confirmed by testing the mother.

Aim
To reduce neonatal mortality and morbidity due to congenital syphilis.

Requirements
- A national policy and locally adapted guidelines on prevention and management of congenital syphilis are available and are being correctly implemented.
- All women and families have access to maternal and neonatal care services.
- Health-care providers attending women and newborn infants throughout pregnancy, childbirth and the postnatal period are competent in: syphilis prevention and screening during pregnancy; treatment of seropositive pregnant women and their partners; detecting clinical signs of congenital syphilis and indications for prophylaxis and treatment in the newborn; counselling on prevention of sexually transmitted infections (STIs); and prevention of reinfection during pregnancy by promoting condom use.
- Equipment and supplies to perform testing are available at all levels of the health-care system.
- Penicillin is available at all levels of the health-care system.
- A functioning referral system is in place to ensure any necessary referral of infants with congenital syphilis to a centre offering special care.
- A referral unit is available and accessible, where special care for congenital syphilis can be provided.
- Effective monitoring and information system for syphilis is available.
- Health education activities are implemented to increase the awareness individuals, families and communities of the importance of being tested for syphilis during pregnancy, having delivery with the support of a skilled attendant and being followed-up in the postnatal period for the prevention and treatment of neonatal syphilis, and STIs in general, including HIV.

Applying the standard
Skilled attendants and other health-care providers assisting women and their newborns at birth and in the postnatal period must perform the following tasks.

1. Check the antenatal care (ANC) card of all women giving birth and test and treat the woman as required (see standard on Prevention of mother to child transmission of syphilis).
2. Examine carefully the newborn of any mother who tested positive for syphilis at any time during her pregnancy or at delivery to exclude signs of congenital syphilis.
3. Administer intramuscularly benzathine penicillin G 50 000 units/kg of body weight, single dose, to asymptomatic infants of women who have tested positive for syphilis.
4. In symptomatic babies confirm the diagnosis by testing the mother with a rapid test.
5. Administer intramuscularly the first dose of aqueous crystalline penicillin 50 000 units/kg of body weight or procaine penicillin G 50 000 units/kg of body weight intramuscularly to symptomatic babies whose mothers have tested positive for syphilis and refer them for treatment to a special care unit to receive 10 days of treatment.
6. Provide information to the woman on the importance of treating the newborn, herself and her partner.
7. Provide information on STI prevention and on voluntary
counselling and testing for HIV.
8. Record the treatment and the referral given on the ANC
card and in the health facility logbook.

Audit

**Input indicators**

- National policy and locally adapted guidelines on the
  prevention and treatment of congenital syphilis are
  available in health-care facilities and are being cor-
  rectly implemented.
- Drugs and supplies for the treatment of adults and
  infants are available in health-care facilities.

**Process and output indicators**

- The proportion of asymptomatic newborns whose
  mother tested positive for syphilis who were properly
  treated with a single dose of penicillin.
- The proportion of symptomatic newborns referred for
  treatment of congenital syphilis.
- The proportion of symptomatic newborns correctly
  treated with 10 days’ course of penicillin.

**Outcome indicators**

- Reduced incidence of congenital syphilis.
- Reduced neonatal and infant mortality due to syphilis.
- Reduced neonatal and infant morbidity due to syphilis.

Rationale

**Burden of suffering**

WHO estimates that each year as a result of maternal
syphilis there are at least 500 000 miscarriages or stillbirths,
and 500 000 babies born prematurely, with congenital
syphilis, or with low birth weight (1). Although estimates
vary, at least 50% of women with acute syphilis suffer
adverse pregnancy outcomes, which are estimated to be
distributed as follow: 50% of pregnancies end in stillbirth
or a spontaneous abortion, and 50% in perinatal death,
serious neonatal infection or low birth weight (1). Even after
treatment, women who have syphilis during pregnancy still
have a 2.5-fold higher risk of adverse outcomes compared
with uninfected women (2). Fetal infection usually occurs
through placenta transfer or at delivery (3).

Congenital syphilis may be asymptomatic, especially in
the first weeks of life, in about 50% of cases (4). Usually
it becomes symptomatic in the first months of life, but its
clinical manifestation may be delayed until the second year
of life (4). The most frequent clinical signs of congenital
syphilis at birth are hepatosplenomegaly, abnormal face,
oedema, abdominal distension, pallor, skin lesions, fever
and low birth weight (4,5). Reported case fatality rates for
symptomatic congenital syphilis in Africa vary between 15%
in Mozambique and 38% in South Africa (4,5).

The major factors contributing to congenital syphilis are lack
of antenatal care, not screening pregnant women, negative
test in the first trimester and test not being repeated, delayed
treatment or failure of antenatal treatment (6).

**Efficacy and effectiveness**

There is general agreement on the need to examine carefully
all infants born to seropositive mothers for evidence of
congenital syphilis, and evaluate them where possible
with a quantitative non-treponemal serological test (RPR or
VDRL) (2). However, it should be noted that the efficacy and
effectiveness of this approach in less developed countries
is still open to question.

Making a clinical diagnosis of congenital syphilis at birth
is difficult because the disease is clinically similar to other
congenital infections and the available serological tests have
limitations (5). In up to 45% of newborns with congenital
syphilis the only indications for the clinician are maternal
history of syphilis and non-specific signs in the infant such
as fever, low birth weight or skin lesions (5).

Testing of all asymptomatic infants born to women who test
positive for syphilis aims for early detection and treatment
of the disease, and this approach is followed in developed
countries (7). However, if a woman becomes infected with syphilis late in pregnancy, her newborn may not test positive with available serological tests. Also, newborns can have a false-positive result because of transfer of maternal antibodies to them. These difficulties with diagnosis and the common logistic problems found in resource-poor settings can potentially seriously affect implementation of congenital syphilis prevention programmes in less developed countries.

One study has shown that a single dose of benzathine penicillin prevents syphilis in asymptomatic high-risk infants (whose mothers had VDRL titres $\geq 1:32$, but who had not been treated) (8). Another study compared a single dose of benzathine penicillin with a 10-day course of procaine penicillin to treat asymptomatic congenital syphilis and found no difference between the two regimens (9). Thus, in resource-poor settings, the use of a single dose of benzathine penicillin 50 000 units/kg of body weight, independently of maternal treatment and without additional diagnostic tests, is an acceptable and perhaps a preferred option (4).

In symptomatic infants the recommended treatment is aqueous crystalline penicillin G 100 000–150 000 units/kg of body weight per day, intramuscularly or intravenously, or benzathine penicillin G 50 000 units/kg of body weight intramuscularly per day for 10 days (4). If more than one day of treatment is missed, the entire course should be restarted. Data are insufficient to recommend the use of other antimicrobial agents.

The availability of drugs and the ability to administer them remains a major constraint in implementing these recommendations. To be successful, public health strategies aimed at reducing the burden of congenital syphilis require increasing coverage of antenatal care, early identification and treatment in pregnancy, identification and treatment of partners, modification of high-risk behaviours and promotion of access to and use of health care.

See also the standard on Prevention of mother to child transmission of syphilis.

References


Links and additional sources


