

The prevention and management of congenital syphilis: an overview and recommendations

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Abstract The continued occurrence of congenital syphilis is an indictment of the inadequate antenatal care services and poor quality of programmes to control sexually transmitted infections. More than 1 million infants are born with congenital syphilis each year. Despite national policies on antenatal testing and the widespread use of antenatal services, syphilis screening is still implemented only sporadically in many countries, leaving the disease undetected and untreated among many pregnant women. The weak organization of services and the costs of screening are the principal obstacles facing programmes. Decentralization of antenatal syphilis screening programmes, on-site testing and immediate treatment can reduce the number of cases of congenital syphilis. Antenatal syphilis screening and treatment programmes are as cost effective as many existing public health programmes, e.g. measles immunization. Diagnosis of congenital syphilis is problematic since more than half of all infants are asymptomatic, and signs in symptomatic infants may be subtle and nonspecific. Newer diagnostic tests such as enzyme immunoassays, polymerase chain reaction and immunoblotting have made diagnosis more sensitive and specific but are largely unavailable in the settings where they are most needed. Guidelines developed for better-resourced settings are conservative and err on the side of overtreatment. They are difficult to implement in, or inappropriate for, poorly-resourced settings because of the lack of investigative ability and the pressure on health facilities to discharge infants early. This paper offers recommendations for treating infants, including an approach based solely on maternal serological status and clinical signs of syphilis in the infant.

Keywords Syphilis, Congenital/diagnosis/therapy; Syphilis serodiagnosis; Prenatal diagnosis; Prenatal care/utilization; Cost of illness; Risk factors; Review literature (*source: MeSH, NLM*).

Mots clés Syphilis congénitale/diagnostic/ thérapeutique; Séro-diagnostic syphilis; Diagnostic prénatal; Soins prénatal/utilisation; Coût maladie; Facteur risque; Revue de la littérature (*source: MeSH, INSERM*).

Palabras clave Sífilis congénita/diagnóstico/ terapia; Serodiagnóstico de la sífilis; Diagnóstico prenatal; Atención prenatal/utilización; Costo de la enfermedad; Factores de riesgo; Literatura de revisión (*fuentes: DeCS, BIREME*).

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Introduction

Congenital syphilis should by now be a medical curiosity. Its continued occurrence is a symbol of the failure of basic systems of antenatal care and control of sexually transmitted infections (STIs). Antenatal screening for syphilis is cost-beneficial (that is, health-care consumers often see the advantage in funding the intervention) and cost effective in developed and developing countries (1). Penicillin is cheap, readily available and effective against *Treponema pallidum*. Yet congenital syphilis remains an important cause of neurological, developmental and musculo-skeletal disability, and death in infants in resource-poor settings.

Search strategy and selection criteria

We searched Medline for studies on the epidemiology, clinical aspects, prevention and management of congenital syphilis.

Publications by WHO and the United States Centers for Disease Control and Prevention, and reference lists from review articles and book chapters were also searched. Keywords used were congenital syphilis, epidemiology, prevention, and therapy. No limits were set for search criteria, although papers published between 1998 and 2003 have been preferentially included. Selection criteria included the relevance of the study or article to health professionals caring for pregnant women, infants and children in developing countries. We also relied on our own knowledge of current issues in the field, referencing articles that, in our opinion, represent important contributions. We excluded articles that were not published in English.

Incidence and burden of disease

WHO estimates that each year maternal syphilis is responsible for 460 000 abortions or stillbirths, 270 000 cases of congenital

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syphilis and the birth of 270 000 low-birth-weight or premature babies (2). This toll easily exceeds that of other neonatal infections, such as human immunodeficiency virus (HIV) and tetanus, which have been targeted for global attention. Congenital syphilis rates closely parallel syphilis rates in women of childbearing age, since the infant acquires the bacterium from an infected mother. Seroprevalence during pregnancy is generally low in developed countries: it ranges from 0.02% in Europe to 4.5% in parts of the United States (3). However, few of these infections result in congenital syphilis owing to access to adequate antenatal care. For example, 13.4 cases of congenital syphilis per 100 000 live births were reported in the United States in 2000 (3, 4), and nine cases of presumptive congenital syphilis occurred in the United Kingdom between 1994 and 1997 (5). In contrast, there has been a dramatic increase in the incidence of congenital syphilis in rural areas of eastern Europe and Central Asia (6). High rates of syphilis seropositivity (3–18%) have consistently been reported at antenatal clinics in Africa (3), where congenital syphilis may account for about 1% of admissions to paediatric wards (7, 8).

There are limited data on the fetal and neonatal consequences of untreated syphilis. Adverse pregnancy outcomes are 12 times more likely in women with syphilis than in seronegative women (9). Even after treatment, women who have syphilis during pregnancy still have a 2.5-fold higher risk of adverse outcomes than uninfected women (10). During the 1990s in the Russian Federation, 544 of 850 (64%) pregnant women with syphilis delivered an infant with confirmed or probable congenital syphilis. Among the 40% of women who received no antenatal care, 86% delivered an infant with congenital syphilis. About 26% of pregnancies ended in fetal or neonatal death; this proportion includes late fetal deaths (7%), stillbirths (16%), and neonatal deaths (3%) (11). In Ethiopia, it was estimated that 5% of all fetuses each year were lost through syphilis-induced abortion (12), while in Zambia 24% of stillbirths and 30% of perinatal mortality were attributed to congenital syphilis (13). In addition, 1–3% of infants younger than 6 months were seroreactive or had signs of congenital syphilis (14). A case-fatality rate for congenital syphilis of 6.4% (stillbirths and deaths/all cases) has been reported in the United States (15). Reported case-fatality rates for symptomatic congenital syphilis in Africa vary between 15% in Mozambique (7) to 38% in South Africa (16).

Data on the impact of congenital syphilis on health systems originate from better-resourced settings, based mostly in developed countries. In these settings neonates with congenital syphilis are more likely to be admitted to the neonatal intensive care unit (NICU) and stay longer in hospital (17). The cost of hospitalization for infants with congenital syphilis is more than three times higher than that of caring for an infant without the disease (18). At one South African hospital, 57% of symptomatic infants with congenital syphilis required NICU admission, and 52% of these infants died. However, their mean stay of 8.3 days in the NICU was no different from that of infants without syphilis. On average, almost one NICU bed (in a 12-bed unit with 600 admissions annually) was always occupied by an infant with syphilis (16).

Why is congenital syphilis still a problem?

The leading factor responsible for the continued high incidence of congenital syphilis globally is the lack of adequate antenatal care (19). In different settings syphilis in pregnancy has been

associated with poverty, HIV infection, substance abuse, and underutilization of the health system. Individual risk factors for syphilis described in different populations include age (younger age is associated with incidence, older age is associated with prevalence), history of stillbirth, being illiterate or female, having multiple casual sex partners, having a self-perceived high risk of acquiring an STI, and being HIV-positive (10, 20).

Congenital syphilis is more likely to occur where mothers have poor antenatal care, that is when they have late, few or no antenatal visits. It is also more likely to occur when the mother has primary syphilis or an illness of unknown duration, higher plasma non-treponemal test titres (Venereal Disease Research Laboratory (VDRL) test titres of $\geq 1:16$) at treatment or at delivery, shorter intervals between treatment and delivery (<4 weeks), or untreated syphilis (11, 21, 22).

Not all countries offer screening for syphilis as a routine part of antenatal services. A review of 22 sub-Saharan countries cited the principal obstacles to screening as problems with organizing services and costs (23). Even where screening was part of the national policy (in three-quarters of the 22 countries) and where antenatal care was widely utilized, syphilis screening was implemented only sporadically. Furthermore, reports from sub-Saharan Africa indicate that fewer than 1 in 10 potentially infected women are adequately treated (23, 24).

Why might women choose to ignore antenatal services when they are available? In a Ugandan study where women attended antenatal services irregularly, few women understood the purpose of antenatal care. Parity significantly influenced attendance (women who had been pregnant more than once were more likely to attend than women who were pregnant for the first time), but level of education, religion and marital status did not. Moreover, 55% of women delivered outside the health system despite attending antenatal clinics (25). Health-seeking behaviour is influenced by several factors, including the perceived high cost of antenatal services and the inadequacies of the services provided (such as the understaffing of clinics and the irregular supply of drugs). Lack of health insurance has been cited as an important barrier to health care during pregnancy even in developed countries (26). In addition, communities may not perceive congenital syphilis to be a problem because of its lack of visibility owing to the high number of fetal deaths.

Notable among problems in health systems are the delayed receipt of results of serological tests, providers' failure to comply with recommended routines, late diagnosis, and ineffective monitoring of cure (27). In practice, testing kits are frequently not available in poorly-resourced settings. Where testing is available, there are often problems because tests are processed at centralized laboratories so that specimens may be lost in transit and there may be delays of up to 4 weeks in turnaround time (often because of unreliable transport) (9).

In both developed and developing countries clients often do not return to health centres for results. Early treatment of syphilis (during the first trimester) is important. However, in rural Zimbabwe only 22% of women attended in the first trimester, and 24% of all pregnant women were unable to pay for care (28). At another site, because women presented late in their pregnancy for their first antenatal visit, 15% of them would have been unable to complete their treatment before delivery if they had tested positive (9). At the same centre, health providers gave minimal information and counselling on syphilis and failed to stress the importance of treatment to clients who tested positive and their partners. There was no strategy to track

either clients with syphilis who had not been treated or their partners. Providers were unclear as to whether partners should be tested before treatment (9).

Costs alone should not be an impediment to implementing a screening programme or to providing adequate treatment. The cost of an individual rapid plasma reagin test (RPR) is about US\$ 0.20, while treating RPR-positive people with benzathine penicillin G costs about US\$ 1.00 per dose (2). In countries with a prevalence of 1%, the estimated cost of a screening and treatment programme is US\$ 0.42 per woman per pregnancy and US\$ 70.00 for each syphilis-associated death or adverse pregnancy outcome that is averted. In countries with a 15% prevalence, the corresponding costs are US\$ 0.70 and US\$ 9.28, respectively (2). These costs compare favourably with other high priority interventions, including immunization programmes. For example, the estimated cost per measles death averted in the Gambia is US\$ 41.00 (23).

The diagnosis of congenital syphilis

Transplacental infection can occur at any stage of pregnancy (29). The stage of maternal syphilis, gestation of the fetus, adequacy of maternal treatment and the immunological response of the fetus cause the varied manifestations of congenital syphilis. The diagnosis of congenital syphilis is based both on a clinical evaluation and on laboratory investigations. Diagnosis is complicated because more than half of all infants are asymptomatic at birth, and signs in symptomatic infants may be subtle and nonspecific (3).

The most characteristic findings of early congenital syphilis (in infants younger than 2 years) are prematurity and low birth weight (10–40% of infants), hepatomegaly with or without splenomegaly (33–100%), a blistering skin rash (40%) (30), and bone changes seen on X-ray (75–100%) (31, 32). Other early signs are pseudoparalysis (12% of neonates; 36% of infants), respiratory distress (34% of neonates; 57% of infants), bleeding (10%) and fever (16%) (7). None of these signs are pathognomonic of syphilis and are seen in other congenital infections. While these signs and investigations will identify most infected infants, their individual sensitivities, specificities and positive predictive values have not been established.

In all settings, suspicion is frequently first raised by a positive maternal serology result, particularly when this has not been followed by adequate treatment during pregnancy (4). The major difficulties in poorly-resourced settings are:

- identifying the potentially high numbers of infants who have congenital syphilis as a result of their mother's disease remaining undetected during pregnancy;
- confirming clinical suspicion without the benefit of sophisticated laboratory tests.

In Mozambique, maternal syphilis status was a reason for suspicion in only 4.1% of neonates, while a suggestive clinical picture (three or more clinical signs) was present in just half (51%) of the cases (7).

Definitive diagnosis is established by identifying organisms in body fluid or tissue by darkfield microscopy, immunofluorescence, or histological examination (4). Because maternal immunoglobulin (Ig) M antibodies do not cross the placenta, the detection of IgM in the infant indicates active infection. Measurement of fetal IgM by the fluorescent treponemal antibody absorption test (FTA-ABS) is widely used in developed countries. In one study, this test had a sensitivity of 88% in children with clinical features of the disease (33). However, there is a

high false-positive rate, and a patient will continue to have a positive test result even after successful treatment. Newer diagnostic tests include enzyme immunoassay, polymerase chain reaction (PCR), and immunoblotting (3).

In poorly-resourced settings confirmation of a clinical suspicion of congenital syphilis is restricted, at best, to use of the VDRL or the RPR serological tests. These tests detect the presence of IgG antibodies, but they can be transferred transplacentally from mother to fetus making interpretation of a positive result difficult (34). Therefore, it is necessary to compare the infant's titres with maternal serological titres using the same test. While a titre that is fourfold higher in the infant is accepted as significant, any increased titre should raise suspicion (35). In settings where testing during pregnancy is infrequent, testing women at delivery would identify maternal cases not detected in pregnancy and improve identification of congenital syphilis.

In asymptomatic infants the need for tests like a lumbar puncture or bone radiograph are often justified by the claim that 60% of these infants may in fact be infected (36). Lumbar puncture has been shown to have a low sensitivity in asymptomatic infants (33, 37, 38). Radiological changes are found in about 20% of asymptomatic infants and do not discriminate between past (intrauterine) infection and current infection (32, 39). The value of these two investigations in asymptomatic infants, particularly in resource-poor settings, is questionable.

The role of a lumbar puncture in symptomatic infants is also debatable. Most infants (>95%) with *T. pallidum* infection of the central nervous system can be identified by physical examination, conventional laboratory tests, and radiographic studies (40). However, the identification of all such infants requires the use of additional tests, including IgM immunoblotting and PCR (41). Furthermore, in settings with fewer resources, interpreting cerebrospinal fluid results can be difficult because the upper limits of cerebrospinal fluid protein concentration and white blood cell counts have not been established in symptom-free infants with syphilis, and sophisticated cerebrospinal fluid serological tests are generally not available.

Managing congenital syphilis

Where diagnostic capacity exists, guidelines recommend that treatment decisions be based on (4, 42):

- identifying syphilis in the mother;
- confirming the adequacy of maternal treatment;
- identifying clinical, laboratory or radiographic evidence of syphilis in the infant;
- comparing maternal non-treponemal serological titres (at delivery) with the infant's non-treponemal titres.

These guidelines are intended to be highly sensitive and conservative and to err on the side of overtreatment so that all potentially infected infants are treated. However, they may be difficult to apply, or inappropriate, in most poorly-resourced settings.

WHO recommends that treatment of congenital syphilis in developing countries be based on (43):

- 1) identifying maternal syphilis (using the RPR test) during pregnancy and/or at delivery and
- 2) identifying whether the infant is clinically symptomatic.

Asymptomatic neonates born to RPR-positive women should receive 50 000 units/kg of benzathine penicillin G in a single intramuscular dose. Symptomatic infants require treatment with intramuscular or intravenous aqueous crystalline penicillin G

administered at a dose of 50 000 units/kg every 12 hours for the first 7 days of life and then every 8 hours for 3 days or intramuscular procaine penicillin G at a dose of 50 000 IU/kg as a single dose daily for 10 days (44). However, WHO guidelines lack clarity on testing procedures and on the value of a lumbar puncture in infants, particularly during follow-up care.

Radcliffe et al. showed 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) (45), countering fears that this approach may result in higher failure rates (46). Another study compared a single dose of benzathine penicillin with a 10-day course of procaine penicillin to treat asymptomatic congenital syphilis (47). It found no difference between the two regimens. Thus, in resource-poor settings, use of a single dose of benzathine penicillin to treat asymptomatic infants at risk of congenital syphilis, without doing a lumbar puncture or X-rays, is an acceptable and, perhaps, preferred option (Table 1). However, the need for a full 10-day course for HIV-exposed, asymptomatic infants needs to be investigated: there have been reports of syphilis treatment failures as well as more false-negative tests in adults infected with HIV (48).

The availability of drugs and the ability to administer them is a perennial problem in many developing countries. In their survey of 49 maternal and neonatal health units in developing countries, Bulatao et al. found that drug availability was a bigger hurdle than the capacity to administer antibiotics intravenously (49). Alternatives to parenteral therapy have been described in a small case series which showed that oral amoxicillin plus probenecid twice daily achieved treponemicidal levels in cerebrospinal fluid in adults. Limited data from animal studies have shown that the newer macrolides, azithromycin, clarithromycin and roxithromycin, are effective treatments for syphilis.

In symptomatic infants given appropriate therapy, clinical features such as hepatomegaly, jaundice and bone changes resolve within three months of birth, and serological markers (RPR and FTA-IgM) disappear within six months (16). On this basis, infants born to mothers with positive RPR tests should be followed up for at least six months.

Reducing the burden and severity of congenital syphilis

Central to any successful programme is a commitment by the national government to prioritize antenatal syphilis screening and treatment. To be successful, public health strategies aimed at reducing the burden of congenital syphilis require early identification of infection in pregnant women via screening; adequate treatment of the woman, and identification and treatment of infected partners; modification of high-risk behaviour; and promotion of access to and use of health care, particularly early antenatal care (3). Since the incidence of congenital syphilis is related to the prevalence of syphilis in the population, these strategies have to be complemented by programmes to prevent and control STIs and by the syndromic management of STIs, as advocated by WHO and UNAIDS. Adjuvant strategies include establishing clear indicators and targets to ensure the adequacy of screening and monitoring, as well as linking STI services with mother and child health services (50).

Ideally, all women should be screened during the first trimester with a non-treponemal test (RPR or VDRL) and again early in the third trimester even in low-prevalence populations (10). An optimal approach would be to retest women who are at high risk or from high-prevalence areas at 28 weeks' gestation and again closer to delivery, since primary infection may occur after initial screening, and there is a possibility of reinfection (especially if partners are not treated). As a minimum, the aim should be to ensure that every pregnant woman has one screening test done early in her pregnancy, and if this does not happen, that she is tested at delivery or soon after, as recommended by WHO.

The solution to the problem of the disassociation between testing and administering treatment lies in the use of on-site testing by nursing staff in antenatal clinics. The feasibility and cost effectiveness of a nurse-run decentralized syphilis screening programme has been well demonstrated (51). The benefits of on-site testing are that delays in receiving results are removed, which leads to earlier treatment particularly of mothers who attend the clinic late in their pregnancy; and mothers who test positive are identified immediately, eliminating the need for costly and unreliable tracing. To be successful, programmes

Table 1. Management of early congenital syphilis

	Mother's RPR ^a or VDRL ^b status		
	Reactive	Unknown	Non-reactive
Infant with signs of congenital syphilis ^c	Two options for treating infant ^e	Test mother Start treatment while awaiting results (if delay expected) • If reactive, continue treatment • If non-reactive, investigate for other causes and modify treatment accordingly	Repeat test
Infant without signs of congenital syphilis ^d	One option for treatment ^f	Test mother	No treatment

^a RPR = Rapid plasma reagin test.

^b VDRL = Venereal Disease Research Laboratory test.

^c Signs of probable congenital syphilis (single sign is suggestive) include vesicular eruptions on palms or soles, hepatosplenomegaly, pseudoparalysis, hydrops (generalized oedema), ascites, and profuse nasal discharge.

^d Signs of possible congenital syphilis in an infant with no symptoms (two or more signs are suggestive) include fever (in first week of life), jaundice (conjugated hyperbilirubinaemia), anaemia, petechiae/purpura, bleeding, low birth weight (with a relatively heavy placenta), and syphilitic facies.

^e Treatment is aqueous crystalline penicillin G 100 000–150 000 units/kg/day, administered as dose of 50 000 units/kg (30 mg/kg) intramuscularly or intravenously every 12 hours during the first 7 days of life and then every 8 hours for 3 days or procaine penicillin G at a dose of 50 000 units/kg intramuscularly as a single daily dose for 10 days.

^f Treatment is benzathine penicillin G in a single dose of 50 000 units/kg (50 mg/kg) intramuscularly.

require adequate stocks of syphilis tests, good staff training and continuous supervision in order to maintain staff motivation and good coverage.

On-site testing may have a low sensitivity, and this may vary by site. In one study, the sensitivity was 50% overall, but increased to 75% for clinically important titres (RPR \geq 1:8), and the test identified all women with titres \geq 1:16, which is the group at greater risk of fetal infection (51). The reduced sensitivity at lower titres is a minor concern since infants born to these mothers have a lower risk of being infected. Furthermore, because the test has a relatively low positive predictive value, about 9% of women will be treated unnecessarily, which, although not ideal, is unlikely to expose them to serious risk (51).

There are conflicting data on whether giving a single dose of benzathine penicillin to pregnant women is sufficient to prevent adverse outcomes or whether a course of at least three doses is better. In a Cochrane review of 26 studies evaluating antibiotics for syphilis diagnosed during pregnancy, none met the predetermined criteria for comparative groups, and none included comparisons between randomly allocated groups of pregnant women (52). Thus, no clear conclusion could be reached. WHO recommends that women with early syphilis (primary, secondary, or infection of less than two years' duration) be given one dose, and women with late syphilis should be given three doses (43). It is, however, often difficult to determine the duration in many latent infections. In addition, uncertainty exists about the duration of treatment in areas with high seroprevalence of syphilis and HIV because there is potentially a higher rate of treatment failure in pregnant women who are HIV-positive (3). Evidence

suggests that treatment for syphilis in pregnant women who are HIV-positive should be similar to that given to other pregnant women, and follow up should be the same as for adults with HIV infection (53).

Finally, there is the question of whether penicillin should be prescribed more liberally to neonates in high-risk areas. Some experts advocate giving all infants in high-risk areas a single dose of benzathine penicillin at birth if their mother has not been tested or if her treatment is likely to have been inadequate. While applying this proposal may reduce the sequelae of congenital syphilis, this can only be a temporary solution and should not distract from a commitment to facilitating maternal syphilis serology testing and adequate treatment of both mother and infant before discharge.

Conclusion

Prevention and control measures for congenital syphilis are clear and must be implemented. What is required is a greater political will to deal with the disease. Despite the increasing global focus on neonatal health and infectious diseases, congenital syphilis still lacks the high priority status it deserves. This is short-sighted, and all who are committed to the health of children must act to move this disease up the agenda. ■

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Résumé

Prévention et prise en charge de la syphilis congénitale : vue d'ensemble et recommandations

La permanence de la syphilis congénitale démontre clairement l'insuffisance des services de soins anténatals et la faiblesse des programmes de lutte contre les infections sexuellement transmissibles. Chaque année, plus d'un million d'enfants naissent avec une syphilis congénitale. Malgré l'existence de politiques nationales de dépistage anténatal et le recours largement répandu aux services de soins anténatals, le dépistage de la syphilis n'est encore pratiqué que de façon sporadique dans un grand nombre de pays, de sorte que la maladie reste non détectée, et donc non traitée, chez de nombreuses femmes enceintes. L'organisation défaillante des services et le coût du dépistage sont les principaux obstacles auxquels doivent faire face les programmes. La décentralisation des programmes de dépistage anténatal de la syphilis, l'exécution des tests sur place et le traitement immédiat pourraient réduire le nombre de cas de syphilis congénitale. Les programmes de dépistage et de traitement anténatals de la syphilis sont d'un aussi bon rapport coût-efficacité que nombre de programmes de santé publique existants, par exemple les programmes de

vaccination antirougeoleuse. Le diagnostic de syphilis congénitale est problématique car plus de la moitié des nourrissons atteints sont asymptomatiques, et chez les autres, les symptômes peuvent être peu marqués et manquer de spécificité. Les nouveaux tests de diagnostic comme les tests immunoenzymatiques, la PCR (méthode d'amplification génique) et l'immunoblot ont amélioré la sensibilité et la spécificité du diagnostic mais restent inaccessibles dans la plupart des contextes où ils seraient le plus nécessaires. Les directives établies à l'intention des services mieux pourvus en ressources sont très prudentes et tendent à pécher par excès de traitement. Elles sont difficiles à appliquer, ou inadaptées, dans les contextes pauvres en ressources, qui manquent de moyens pour pratiquer les investigations nécessaires et qui doivent faire face à la tendance des établissements de soins à ne pas garder longtemps les nouveau-nés. Le présent article propose des recommandations pour le traitement des nourrissons, y compris selon une approche reposant uniquement sur le statut sérologique de la mère et les signes cliniques de syphilis chez l'enfant.

Resumen

Prevención y tratamiento de la sífilis congénita: panorámica y recomendaciones

La persistencia de la sífilis congénita es un grave indicio de la insuficiencia de los servicios de atención prenatal y de la escasa calidad de los programas de control de las infecciones de transmisión sexual. Cada año nacen con sífilis congénita más de un millón de niños. A pesar de las políticas nacionales sobre la realización de pruebas prenatales y el uso generalizado de

los servicios de atención prenatal, el cribado de la sífilis es una medida que sigue aplicándose sólo de manera esporádica en muchos países, lo que significa que la enfermedad evoluciona sin ser detectada ni tratada en muchas mujeres embarazadas. La precariedad de los servicios de cribado y sus costos son los principales obstáculos afrontados por los programas. La

descentralización de los programas de cribado prenatal de la sífilis, las pruebas in situ y el tratamiento inmediato pueden reducir el número de casos de sífilis congénita. El cribado prenatal de la sífilis y los programas de tratamiento son tan costoeficaces como muchos de los actuales programas de salud pública, por ejemplo la vacunación contra el sarampión. El diagnóstico de sífilis congénita plantea problemas dado que más de la mitad de los lactantes son asintomáticos, y los signos que presentan los sintomáticos son a veces sutiles e inespecíficos. Las pruebas diagnósticas más recientes, como el inmunoanálisis enzimático, la reacción en cadena de la polimerasa y la inmunotransferencia, han aumentado la sensibilidad

y la especificidad del diagnóstico, pero la mayoría de las veces no están disponibles en los entornos donde más se necesitan. Las directrices formuladas para los entornos mejor dotados pecan de demasiado prudentes y tienden al sobretreatmento. Son difíciles de implementar en los entornos con pocos recursos, o inapropiadas para ellos, debido a la falta de medios de investigación y a la presión que soportan los establecimientos de salud para dar de alta cuanto antes a los lactantes. En este artículo se dan recomendaciones para el tratamiento de éstos, incluido un enfoque basado exclusivamente en el estado serológico de la madre y en los signos clínicos de sífilis en el lactante.

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Commentary

Controlling congenital syphilis in the era of HIV/AIDS

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Syphilis is a complex disease with potentially serious outcomes for pregnant women and their infants. The prevalence of syphilis in pregnant women and in children is difficult to evaluate: diagnostic tests have limitations; diagnosis can be complex, particularly in infants; and outcomes of infection in pregnancy are not always easily attributable to syphilis. As a consequence, the monitoring of programmes to prevent maternal and congenital syphilis is often poor or does not occur, and evaluations of programmes often require special studies to be undertaken because information is not readily available. Published information on prevalence lacks homogeneity, continuity and representative coverage, and it cannot be relied upon as a sole source for monitoring or evaluation purposes. Congenital syphilis remains a global public health problem. There is a need for improved surveillance of syphilis and its adverse outcomes. There may be synergies that could be identified for the mutual benefit of both antenatal screening programmes and strategies to prevent mother-to-child transmission.

Despite the long-standing existence of policies for the universal screening and treatment of women in pregnancy there remain challenges with both the diagnosis (1) of the disease and implementation of the programmes (2). Furthermore, if untreated or inadequately treated women progress to delivery, the non-specific nature of the symptoms of congenital syphilis and the poor diagnostic tools available make diagnosis difficult (1).

Problems with data

The lack of suitable diagnostic tests has resulted in limited comparability of data and has also limited the interpretation of data. To add to this, data on the prevalence of syphilis in pregnancy have been biased towards urban populations who may have better access to health care. In addition, the data lack geographical coverage, are often published long after collection, and estimates are highly variable. In many cases, local data have been generalized to represent national prevalence figures. Information on trends is often not available at all. This means that the quality of information obtained from the monitoring and evaluation of antenatal screening programmes for syphilis is poor. Basic information on the proportion of women tested, found positive and treated is not readily available, and often case studies have had to be conducted to evaluate programmes (2). The lack of convincing evidence of antenatal syphilis as a public health problem may be one of the reasons that Saloojee et al. state that “congenital syphilis still lacks the high priority status it deserves” (1). This disease, which can be treated with

inexpensive drugs, continues to cause significant morbidity and mortality (1).

Lessons learnt from HIV programmes

In contrast, the high level of politicization and priority given to human immunodeficiency virus (HIV) has led to the rapid roll-out of vertical programmes to prevent mother-to-child transmission; these programmes are much more complex to implement than are syphilis screening and treatment programmes. What lessons can be learnt from the advent of HIV and the implementation of programmes to prevent mother-to-child transmission?

Programmes to prevent the transmission of HIV from mother to child have been implemented rapidly, and they have brought significant resources into antenatal care. These programmes already have effective diagnostic tests for adults and infants (including rapid tests that can be used in primary care), counselling materials aimed at preventing HIV infection, guidelines and protocols for the care of mothers and infants, and routine surveillance has been implemented in many parts of the world.

The parallels between these two sexually transmitted infections — HIV and syphilis — are striking. Both syphilis and HIV are important public health problems that share many adverse pregnancy outcomes (3–10). There is a need to use resources effectively to reduce maternal and infant morbidity and mortality. There are opportunities to provide counselling, screening and surveillance for both HIV and syphilis together, and these should not be missed. In addition, programmes to prevent HIV could provide the catalyst required to focus not only on congenital syphilis but they could also be used to prevent other diseases, such as hepatitis B and neonatal tetanus.

The need for better tests for syphilis, for data on effective alternative drug regimens, and the need to improve access to testing through the use of on-site tests remain challenges, and progress has been slow. Perhaps these issues could be addressed if programmes to prevent syphilis were linked with programmes to prevent mother-to-child transmission of HIV; these combined programmes could build on the extraordinary political will that HIV prevention programmes have benefited from.

Screening for syphilis in pregnancy has achieved a relatively high level of integration into antenatal care programmes and high, although not universal, coverage of testing. However, programmes to prevent the transmission of HIV from mother to child are new, work vertically, and are still struggling with the need to improve the uptake of testing. In some countries,

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such as South Africa, syphilis testing has been included as part of annual antenatal HIV surveillance and has given researchers representative and current data on trends in syphilis (11). It may one day be possible for a rapid finger-prick test for both HIV and syphilis to be used during an antenatal appointment.

Programme managers and policy-makers need to identify synergies between programmes, evaluate the feasibility and cost-

effectiveness of integrated approaches, and ensure that the lessons learnt are fed into the development of antenatal care policies and guidelines for the mutual benefit of both syphilis screening and programmes to prevent mother-to-child transmission. The potential positive public health impact of syphilis screening and treatment programmes to prevent mother-to-child transmission of HIV is huge and must not be ignored. ■

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