The antenatal prevention of congenital syphilis in a peri-urban settlement

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Abstract

The obstetric records of patients from Khayelitsha were examined to assess the efficiency of a system for the antenatal prevention of congenital syphilis, and to identify points of breakdown in the process. Seventy-seven (12.7%) of 607 mothers had serological evidence of syphilis, including 10 (32.3%) of 31 mothers who had received no antenatal care. Of 70 patients who required routine management, only 36 (51.4%) received 3 or more of the recommended 4 penicillin injections. Two main weaknesses in the system were identified. One was the centralisation of serological testing. This delayed results reaching the relevant unit, and was responsible for a high cumulative attrition of patients during the many stages necessitated by the centralised testing. The other was a 24.5% attrition of patients referred from the antenatal clinic to a separate sexually transmitted diseases clinic.

Patients and methods

Khayelitsha is served by a midwife obstetric unit* (MOU), which refers patients to any of 4 hospitals in the PMNS. The antenatal prevention of congenital syphilis should be preventable. Penicillin has been available for almost 50 years and maternal screening programmes for syphilis may be cost-effective at an incidence as low as 5 per 100 000. Yet congenital syphilis remains a significant cause of illness and death in both the developed and the developing world. In Khayelitsha, a rapidly growing settlement on the outskirts of Cape Town, congenital syphilis is the second biggest known cause of perinatal death. It accounts for 24% of deaths from 'known' causes (S.V. Delport, R. C. Howland - personal communication), despite almost 90% of pregnant women receiving antenatal care from the Peninsula Maternal and Neonatal Service (PMNS), including screening for maternal syphilis.

A retrospective analysis of the records of Khayelitsha patients presenting to the PMNS was undertaken to assess the efficiency of the prevention programme, and to identify points of breakdown in the process.

Results

The prevalence of serological evidence of syphilis in MOU deliveries only is shown in Table II. Seventy-seven (12.7%) of 607 patients were seropositive, including 10 (32.3%) of 31 unbooked patients.

Taking MOU, GSH and PMH deliveries all into account, the records of 84 of 86 patients known to be serologically positive at delivery were traced. Fourteen of these were excluded from further analysis; 5 because a repeat VDRL at the STD clinic was negative, 3 because of inadequate documentation of treatment at one of the hospitals. The attrition of the remaining 70 patients while negotiating successive hurdles in the detection and treatment process is shown in Table I. Thirty-five (50%) required 3 or more of the recommended 4 penicillin injections. The greatest attrition (24.5%) took place at the time of referral from the antenatal clinic to the STD clinic.

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The stage with the greatest attrition rate (24.5%) was referral to the STD clinics, although the main STD clinic is housed in the same building complex as the antenatal clinic. This attrition rate may be an overestimate because of uncertainty about the attendance of 5 patients (who were excluded from the analysis). But even if all 5 of these patients had reached the STD clinic, the default rate for this stage would still be 22.4%. The ‘defaulters’ were not habitual non-attenders, 66.7% of them having attended the antenatal clinic at least 4 times. Possible reasons for non-attendance include poor co-ordination between different clinics administered by different health authorities, the painful injections, and the stigma attached to STD clinic attendance. The reasons for this attrition clearly need investigation to allow for appropriate intervention.

Nevertheless, 1 injection is regarded as adequate treatment for current or recent secondary syphilis, the stage when the risk of transmission to the fetus is greatest.

The policy of giving the first injection at the MOU before referral to the STD clinic resulted in 71.4% of patients receiving at least 1 injection.

The mothers of the 2 babies with evidence of congenital syphilis had booked too late for any antenatal treatment. This is consistent with the findings of a retrospective survey of 27 infants from Khayelitsha with congenital syphilis, 78% of whose mothers had booked late (a median of 14 days before delivery). Because of the delays in receiving results from the centralised laboratory, 50% of the booked mothers had received no treatment by the time of delivery. Subsequent attempts to expedite the communication of positive results to the antenatal clinics met with little success. Despite a special effort, only 18% of affected patients in Khayelitsha were traced and treated with less delay than before. Even so the median delay was 7 days.

In these circumstances on-site serological testing has obvious attraction as an alternative to centralised testing. It would eliminate the delay in receiving results and lead to significantly earlier treatment of mothers who book late. It would reduce the number of steps in the prevention process. It would also immediately identify seropositive unbooked mothers, obviating the difficult, expensive and unreliable process of trying to trace them later. The main difficulty with on-site testing relates to the decentralised nature of the MOUs and the problems of staffing and maintaining quality control in 9 peripheral laboratories operating simultaneously. Whether this difficulty negates the many potential advantages of on-site testing requires careful consideration.

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