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### Congenital syphilis in the newborn

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**SUMMARY** We studied 53 newborn babies with congenital syphilis. The common clinical features seen were low birth weight, hepatosplenomegaly, anaemia, jaundice, and symmetrical superficial desquamation of the skin affecting palms and soles. The presence of these clinical signs is highly suggestive of early congenital syphilis. Hydrops fetalis without rhesus or ABO isoimmunisation should always arouse the suspicion of congenital syphilis.

Sexually transmitted diseases continue to be a serious public health problem all over the world. In recent years an increase in the incidence of acquired and congenital syphilis has been reported from both developed and developing countries.1 The present study, which emphasises the neonatal aspects of this disease, was undertaken to document the clinical range of congenital syphilis in the neonatal period, identify common clinical features of the disease in this age group, and assess the immediate prognosis of the disease in the neonatal period.

**Patients and methods**

Newborn babies included in the study were born in the greater Harare area and admitted to the neonatal unit, Harare Central Hospital, which is the referral centre for all high risk newborn babies in the city of Harare, Zimbabwe. The total number of newborns admitted to the neonatal unit during the study period, 1 January to 31 December 1986, was 5287.

The diagnosis of early congenital syphilis was based on positive serology for syphilis in mother or infant, or both, in the presence of two or more clinical signs suggestive of early congenital syphilis.2 The clinical signs regarded as suggestive of early congenital syphilis were as follows: (a) haematological manifestations—that is, anaemia, thrombocytopenia; (b) hepatomegaly or hepatosplenomegaly; (c) jaundice; (d) mucocutaneous lesions—for example, snuffles, condylomata lata, skin rash, peeling skin of palms and soles, etc; (e) nonimmune hydrops; (f) Parrot's pseudoparalysis; and (g) radiological appearance in the long bones suggestive of congenital syphilis.

The serological tests employed for establishing the diagnosis of congenital syphilis were the rapid plasma reagin test and *Treponema pallidum* haemagglutination assay. A total of 53 newborn babies fulfilled the diagnostic criteria laid down above and were included in the study.

**Results**

The frequency of clinical features at presentation is shown in the table. Hepatomegaly or hepatosplenomegaly of 2 cm to 6 cm was present in 28 (53%) and 26 (49%) patients respectively. Clinical jaundice was noted in 25 infants (47%). Unconjugated hyperbilirubinaemia was much more common than

<table>
<thead>
<tr>
<th>Clinical feature</th>
<th>No (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low birth weight</td>
<td>41 (77)</td>
</tr>
<tr>
<td>Hepatomegaly</td>
<td>28 (53)</td>
</tr>
<tr>
<td>Splenomegaly</td>
<td>27 (51)</td>
</tr>
<tr>
<td>Hepatosplenomegaly</td>
<td>26 (49)</td>
</tr>
<tr>
<td>Anaemia*</td>
<td>16 (50)</td>
</tr>
<tr>
<td>Thrombocytopenia</td>
<td>12 (38)</td>
</tr>
<tr>
<td>Jaundice</td>
<td>25 (47)</td>
</tr>
<tr>
<td>Skin lesions</td>
<td>20 (38)</td>
</tr>
<tr>
<td>Respiratory distress</td>
<td>10 (19)</td>
</tr>
<tr>
<td>Hydrops fetalis</td>
<td>3 (6)</td>
</tr>
<tr>
<td>Snuffles</td>
<td>2 (4)</td>
</tr>
<tr>
<td>Pseudoparalysis</td>
<td>2 (4)</td>
</tr>
</tbody>
</table>

*Haemoglobin concentrations and platelet counts were available in 32 babies only, therefore percentages are from a total number of 32.
conjugated hyperbilirubinaemia. Bilateral symmetrical desquamation of the skin of the upper and lower extremities, especially affecting the medial part of thighs, palms, and soles, was the commonest skin lesion observed. Vesiculobullous lesions, which when they ruptured left behind raw denuded oozing areas, were present in a few cases only.

In all the 10 infants who developed respiratory distress, the onset was within the first 24 hours of life. The clinical course was compatible with the diagnosis of hyaline membrane disease in four, neonatal sepsis in three, and transient tachypnoea of the newborn in two. One patient remained tachypnoeic beyond the neonatal period and was still tachypnoeic at the age of 2 months and could have had syphilitic pneumonitis.

Haemoglobin concentrations and platelet counts were available on 32 (60%) newborns only. Anaemia (haemoglobin concentration <135 g/l) was present in 16 (50%) cases; the lowest haemoglobin concentration recorded was 67 g/l. Thrombocytopenia (platelet count <150\times10^{9}/l) was present in 12 cases (37%). Bleeding from injection sites was noted in one infant who had a platelet count of 55.4\times10^{9}/l.

The case fatality rate in the present study was 13% (seven out of 53). All these seven infants were low birthweight neonates. Nonimmune hydrops was present in three. Six of the seven deaths (86%) were early neonatal deaths, and one (14%) was a late neonatal death. In addition to the stigmata of congenital syphilis, mild to moderate respiratory distress was present in five cases, apnoeic attacks in one, meconium aspiration and birth asphyxia in one each. These conditions may have also contributed towards the death in these seven infants.

Discussion

The classical clinical manifestations of early congenital syphilis are rare in the neonatal period with most becoming symptomatic within first 3 months of life.\(^1\) Disease can be identified in the newborn, however, if a high degree of suspicion is exercised.\(^2\) Low birth weight, hepatosplenicomegaly, anaemia, jaundice, and superficial desquamation of palms and soles were the most frequent clinical signs observed in the present study. The incidence of hepatosplenicomegaly among our patients was much lower when compared with the incidence of 90–100% reported by the other authors.\(^3\)\(^4\) Neonatal jaundice was a common clinical mode of presentation and was present in 47% of the newborns. Hira et al showed that 44% of newborn babies with early congenital syphilis were jaundiced when compared with 3% of infants in the postneonatal period.\(^3\)\(^5\) A previous study by one of us (VC) in Zambia showed that jaundice was present in 77% of the newborn babies with syphilis while only 6% of infants with syphilis in the postneonatal period had jaundice.\(^2\)

The characteristic bilateral, symmetrical, hypopigmented skin lesions affecting buttocks, upper and lower extremities, and napkin area were relatively infrequent in the newborn.\(^2\)\(^3\) An erythematous shiny appearance of the soles and palms with superficial peeling of the skin was the commonest cutaneous manifestation observed and was very helpful in early diagnosis. Other mucocutaneous manifestations like snuffles (4%) and condylomata lata are also infrequent in the neonatal period.\(^2\)\(^3\) Pseudoparalysis is rare in the neonatal period and was observed in only two cases (4%).

The role of congenital syphilis in the pathogenesis of intrauterine growth retardation is controversial. In the present study 77% of the newborn babies were of low birth weight, which is similar to the incidence of 76% and 81% reported by Hira et al\(^3\) and Tan.\(^5\) Others, however, have found no significant difference in the incidence of low birth weight among the newborn babies of seropositive and seronegative mothers.\(^6\)

The high mortality rate in the neonatal period despite adequate treatment is probably due to irreversible damage resulting from overwhelming spirochaetemia. If the infant survives the neonatal period the prognosis with treatment is good.\(^3\) The overall case fatality rate in the present study was 13%, which is much lower than the case fatality rates reported by other authors.\(^4\)\(^5\) The presence of nonimmune hydrops carries a poor prognosis.\(^5\) All the three patients with hydrops died.

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References


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