SYPHILIS – BABIES BORN TO MOTHERS WITH POSITIVE SEROLOGY

INTRODUCTION

- If maternal syphilis serology positive on booking bloods check British Association of Sexual Health and HIV (BASHH) syphilis infant birth plan – see https://www.bashh.org/resources/25/updated_guideline_syphilis_2024

RECOGNITION AND ASSESSMENT

- **No risk**
- assessed by genitourinary medicine (GUM)
- past infection with documentation of previous adequate treatment (with appropriate beta-lactam antibiotic)
- **Low risk**
- mother adequately treated with appropriate beta-lactam antibiotic during this pregnancy >4 weeks prior to delivery
- **High risk**
- mother:
  - treated <4 weeks before delivery **or**
  - treated with non-beta-lactam regimen **or**
  - untreated/inadequately treated or inadequately reported

CLINICAL FEATURES

General	• Low birth weight • Prematurity • Non-immune hydrops • Pyrexia
Haematological	• Generalised lymphadenopathy • Hepatosplenomegaly • Jaundice • Anaemia (can be haemolytic) • Thrombocytopenia
Skin	• Rash (usually maculo-papular, may be a blueberry muffin rash, but almost any form of rash is possible) • Palms and soles may be red, mottled and swollen • Vesiculobullous lesion • Condylomata lata (flat, wart-like plaques in moist areas such as the perineum) • Perioral fissures • Severe desquamation, often of hands/feet
Mucous membranes	• Haemorrhagic rhinitis (bloody snuffles) • Ulceration of the nasal mucosa • Mucous patches
Neurological	• Meningitis • Microcephaly • Hydrocephaly • Intracranial calcification • Sensorineural deafness • Failure to move an extremity (pseudo-paralysis of Parrot)
Ophthalmic	• Cataracts • Corneal scarring • Glaucoma • Chorioretinitis

	• Microphthalmia
Skeletal	• Osteochondritis • Periostitis (elbows, knees, wrists)
Liver	• Hepatosplenomegaly • Jaundice (may be conjugated) • Hepatitis
Other	• Multi-organ failure • Glomerulonephritis • Pneumonitis

INVESTIGATIONS

No risk

- **No** investigations

Low risk

- Maternal blood sample for syphilis serology to be taken on admission
- Send venous blood for infant syphilis serology (treponemal antibody/RPR/IgM)
- check with local laboratory regarding volume needed
- ask to prioritise RPR
- do not use infant cord blood
- Examine baby:
- if normal, can be discharged with follow up blood tests at 3 months (please request under Dr Seager)
- if lesions or signs of congenital syphilis, follow 'high risk' pathway

High risk

- Take blood samples as mentioned in 'low risk' section
- Congenital syphilis likely if:
- clinical features suggestive of congenital syphilis
- low risk with RPR ≥ 4x maternal RPR or positive CSF RPR test or positive treponemal IgM
- If lesions present, consult local GUM and specialist paediatric services
- carry out dark ground microscopy and/or PCR of exudates or body fluids, e.g. nasal discharge (direct demonstration of *T. pallidum*)
- send throat swab or nasopharyngeal aspirate for PCR
- Full blood count, blood film, liver function, electrolytes, creatinine, lactate, bone chemistry
- CSF: cells, protein, RPR, treponemal antibody
- Urine: test for blood/protein
- X-rays of 4 limb long bones
- Ophthalmic assessment
- Audiology
- If physical signs present test for other congenital infections: HIV, hepatitis, HSV etc. (SCORTCH https://adc.bmj.com/content/106/2/117)

TREATMENT

- If high risk, start treatment from birth, no need to wait for serology results
- Benzylpenicillin 25 mg/kg IV (**BNFc**) for 10 days
- aged <7 days 12-hrly
- aged 7–28 days 8-hrly
- aged >28 days: 6-hrly
- If ≥24 hour's dosing missed, restart treatment as Treponema can rapidly regrow
- Repeat LP at 6 months if CSF white cells/protein raised or CSF RPR positive/TPHA >1:320
- Positive antenatal screening treponemal serology and cases of possible/confirmed congenital syphilis to be notified to Integrated Screening Outcomes Surveillance Service (ISOSS)
- Report cases of congenital syphilis as a serious incident

FOLLOW-UP

Aged (months)	Baby not treated for syphilis	Baby treated for syphilis at birth
3	RPR and treponemal IgM • If RPR and IgM negative: discharge • If RPR titre falling but still positive: repeat at 6 months • If RPR titre unchanged from birth, or rising, or IgM positive: discuss with local paediatric infection specialists or GUM	RPR and treponemal IgM • If RPR falling: review at 6 months • If RPR unchanged from birth, or rising, or IgM positive: discuss with local paediatric infection specialists or GUM
6	RPR • If RPR negative: discharge • If RPR titre falling but still positive: repeat at 12 months • If RPR titre unchanged from previously or rising: discuss with local paediatric infection specialists or consult GUM	RPR • If RPR falling: review at 12 months • If RPR unchanged from previously or rising: discuss with local paediatric infection specialists or GUM • Babies treated with a positive CSF to also have follow-up CSF after 6 months
12	RPR • If RPR negative: discharge • If RPR positive: discuss with local paediatric infection specialists or GUM	RPR • If RPR has achieved sustained 4x drop from peak level: discharge • If RPR remains higher: discuss with local paediatric infection specialists or GUM