

subsequent or second-line regimen would be PI-based.

Any interested treaters who would like to participate should e-mail the managing editor of the *Southern African Journal of HIV Medicine* at Igbekker@cormack.uct.ac.za, expressing the number of patients likely to be treated at their site in the next year.

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GUIDELINES

INFANT HIV DIAGNOSTIC GUIDELINES TO FACILITATE ADOPTION

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South Africa is currently estimated to have 300 000 HIV/AIDS orphans, and the figure is likely to increase to 2 million by 2015.¹ Facilitating adoption of children affected by HIV provides a highly effective strategy for addressing the HIV/AIDS orphan crisis, albeit on a very small scale. The legal and ethical issues surrounding HIV testing of abandoned children for the purposes of adoption are not addressed here.

The qualitative HIV polymerase chain reaction (PCR) test is highly specific for HIV infection, but sensitivity varies with the age of the infant.² The PCR identifies approximately 50% of infected infants at or just after birth and > 95% at 3 - 6 months of age.^{2,3} More recent evidence suggests that HIV PCR tests performed at ≥ 1 month of age have a sensitivity of $\geq 95\%$ and specificity of $> 99\%$.⁴ The Roche Amplicor Kit (Roche Molecular Systems, Somerville, NJ)

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6 weeks of age

HIV ELISA to assess HIV exposure at birth (omit if the HIV ELISA of the mother is confirmed positive)
 Qualitative HIV PCR if the HIV ELISA of the infant (or the mother) is reactive

3 months of age

Qualitative HIV PCR to confirm result of PCR at 6 weeks of age

Notes

1. **Clinical examination** to assess for stigmata of HIV infection should be performed at 6 weeks and 3 months of age. The 6-week clinical examination, when stigmata of HIV infection may be less evident, is likely to be less helpful than the 3-month examination.
2. At 6 weeks of age, blood should be taken for **both HIV ELISA and PCR** tests and the PCR analysed only if the HIV ELISA test result is reactive.
3. **Postnatal transmission** of HIV infection is likely to be evident by 6 weeks after termination of breast-feeding; nevertheless it is recommended that the final qualitative HIV PCR test be performed 3 months after breast-feeding has ceased.

Interpretation

Two concordant qualitative HIV PCR results in an appropriate clinical context confirm the HIV status of the child.
 Discrepant PCR results require further investigation.

version 1.5, which has shown excellent sensitivity and specificity in the South African setting, is the recommended qualitative (DNA) PCR test.

There are no published HIV diagnostic guidelines for facilitating adoption. Such guidelines require a balance between making an **accurate** diagnosis of the child's HIV infection status and doing so as **early** in life as possible, factoring in practicalities and cost considerations.

Current HIV diagnostic guidelines for perinatally exposed infants recommend that HIV infection be confirmed by 2 positive HIV PCR tests performed on different samples. Negative HIV infection status is established if 2 HIV PCR tests, the first at ≥ 1 month of age and the second at ≥ 4 months, are negative in a non-breast-fed infant. To determine definitively that the child is not infected, seroreversion should be demonstrated by 2 negative HIV enzyme-linked immunosorbent assay (ELISA) tests, the final one performed at 24 months of age.^{3,5}

The second PCR test is done to confirm the first PCR result and to guard against technical or sample mix-up errors. This could be achieved by re-testing as soon as possible after the first PCR test result is known,^{2,3} but performing the second PCR at an older age increases the sensitivity of the test by detecting the < 5% of infants who will test positive for the first time after 1 month of age. The recommended HIV diagnostic protocol for adoption purposes is explained in the box above.

The possibility that antiretroviral therapy used in prevention of mother-to-child transmission (PMTCT) programmes may affect the timing of the PCR testing in infancy has not been substantiated.⁴ Local data on clinical stigmata of HIV at 6 weeks and 3 months of age and the sensitivity and specificity of qualitative HIV PCR as well as the influence of nevirapine for PMTCT on the timing of PCR testing are expected shortly. These diagnostic guidelines are likely to evolve as new data and technical improvements in testing become available.²

All abandoned neonates estimated to be ≤ 72 hours of age should be given post-exposure prophylaxis. If logistics are in place for obtaining HIV test results quickly, only HIV-exposed neonates should be treated.

It is theoretically possible for an HIV-exposed child to have a non-reactive HIV ELISA if the mother seroconverted late in pregnancy or, less plausibly, if she was terminally ill towards the end of the pregnancy. Both situations are associated with a high viral load and increased propensity for vertical transmission of HIV. The suggested diagnostic guidelines would not detect neonates exposed to HIV under these circumstances unless they presented with clinical stigmata. Despite the high prevalence of HIV in South Africa, it is expected to be rare for an HIV-exposed child to have a non-reactive HIV ELISA test, so qualitative HIV PCR testing of every child being investigated for adoption is not warranted.

Adoptive parents need to be aware of the fact that despite comprehensive general medical examinations and testing, there is no guarantee of a completely healthy child. In the context of HIV testing, this applies to the possibility of a negative HIV ELISA in an HIV-exposed child, as well as the recommendation to do the final HIV PCR test at 3 months instead of the exceptionally expensive and extreme recommendation of an HIV ELISA at 24 months of age.^{2,4,5} Performing additional HIV tests is unlikely to yield different results from those achieved using the diagnostic guidelines suggested above.

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