

HIV Paediatric case 1 – Suzen’s baby



▶ *This is Suzen; she’s 21 years old. Four years ago she did an HIV test which was negative. A year later she gave birth to her first child. She breastfed her baby for 2 years. Then 9 months ago she did another HIV test which this time was positive. She found out she was pregnant a month later. Six months into her pregnancy another test confirmed that she is positive.*


STOP POINT

Mother’s History:

- 4 years ago: Tested HIV negative.
- 3 years ago: First child born (No HIV test during pregnancy)
- 9 months ago: Tested HIV positive (First child is 19 months old)
- 8 Months ago: Found out she was pregnant with second child.
- 2 months ago: Tested HIV reactive a second time.
- Initiated on ART

DID SHE START ART AT THE RIGHT TIME? COULD HER ELDER CHILD BE INFECTED?


- 1) No, she should have started earlier in the pregnancy when she first tested positive.
- 2) Yes there is a risk the elder child is infected and so should be tested for HIV. Suzen may have become infected before the elder child was born or during breastfeeding

 2 days ago Suzen was referred from a health centre, where she had just given birth at 8 months to a baby girl. The weight of the baby on admission was 1.54 KG.

STOP POINT

IS THE BABY EXPOSED, INFECTED OR UNINFECTED? WHAT IS YOUR PLAN FOR SUZEN AND HER BABY?


- 1) Exposed.
- 2) Plan for baby: Start Nevirapine Syrup as soon as possible after birth until age of 6 weeks, then continue with Co-trimoxazole prophylaxis until age 24 months when child can be tested definitively. NVP should have been started at the health centre. Fill out growth chart each day.
Plan for Suzen: Check mother is adhering to ART and understands the importance for both her and the baby. Explain feeding plan for baby Suzen.

 Nevirapine syrup was started straight after admission. Suzen says she understands the importance for the baby. When asked about her own ARVs, she says she has been taking them properly for the two months since she initiated ART. Her bottle, which is for a month's supply, is more than half empty. This should be her second bottle since starting ART. But there is no record of her returning to the health centre a month after initiation to collect the second set of medicines.

STOP POINT

WHAT WOULD YOU DO REGARDING SUZEN'S ART?

Should talk to the mother about adherence. Counselling should make sure that she understands her own medicines will stop the baby becoming infected because she is not infective if she is successfully on treatment. Also ask about the home situation. Does the husband know that she is HIV positive?

 This could either be an error at the health centre or else her adherence is poor. She needs to be briefed both on the importance of adherence and on asking for her health passport to be properly filled out. When asked about her husband, Suzen says he tested HIV negative a year ago, but has not had a test since.

STOP POINT

DETERMINING THE BABY'S HIV STATUS: WHAT TESTS WILL DETERMINE IF SUZEN'S BABY IS HIV POSITIVE?

There are two types of HIV diagnostic tests: serological (or antibody) tests (also called rapid tests) detect antibodies made by immune cells in response to the virus. They do not detect the virus itself. There are some occasions when the test is not reliable:

- 1) Because the body takes some time (usually 4 weeks, but up to 3 months) to produce anti-bodies, these tests are not effective immediately after someone has become infected. So a woman who was infected during pregnancy may not test positive straight away, even though she is in fact infected and could pass the virus on to her baby.

- 2) A mother who has been infected with HIV long enough to produce anti-bodies in her blood can pass these antibodies to the baby during delivery. These maternal anti-bodies may stay in the child's blood until the age of 18 months. This means that a positive antibody test in children under the age of 18 months is not reliable and does not confirm that the child is truly HIV-infected. Serological or antibody tests are used to confirm HIV infection in children who are more than 18 months of age. If a rapid antibody test is done for a child older than 18 months and the result is positive, then that child is HIV-infected.
- Virological tests, such as HIV PCR tests, directly detect HIV in the blood. These tests can therefore detect HIV infection in the child before the child is 18 months old. If an HIV PCR test is done for an infant and the result is positive, then that infant is HIV-infected (unless there is an error at the lab).
 - Babies are categorized as either exposed, infected or uninfected. Getting a definitive answer as to whether they are infected or uninfected can take up to two years after birth if the mother continues breastfeeding for that long.
 - All children born to HIV positive mothers will have been exposed to the virus either in the uterus or during birth. All breastfeeding babies continue to be exposed as the virus can be passed through breast milk. Mothers who are adherent on ART have only a very small risk of passing on the virus through breast feeding. If they do not breastfeed, on the other hand, there is a very high risk of the child becoming sick with other illnesses and dying. So HIV positive mothers are all started on ART and it is recommended that they breastfeed.

The tests normally done on exposed infants are:

Age 6 weeks: HIV PCR test.

- If positive – this is definitive and the child is infected.
- If negative – The child is negative at this moment. But if they are breast feeding they are still exposed. So they could become infected at a later date.

Age 9 months to a year: Rapid Anti-body test for those who tested negative to the DNA-PCR.

- If positive – this is a strong indication of infection – but an HIV PCR test would be needed to confirm infection.
- If negative – This is a strong indication that the child is uninfected. But they are still exposed through breast-feeding.

Age 24 months, 6 weeks after stopping breast feeding: Rapid test for those who have so far tested negative. This is to check that they have not become infected through breast feeding.

- If negative: They are uninfected.
- If positive: They are infected.

In addition any child showing HIV related symptoms should be tested. This is true of exposed children (whose mothers who are known to be HIV positive) and mothers of unknown status. Most newly diagnosed HIV positive children have mothers who for some reason were not given treatment for Prevention of Mother To Child Transmission (PMTCT) and so do not know their status or think they are HIV negative.

A positive anti-body test before 18 months of age + positive symptoms of HIV related illness are a criteria to start ART. The most common symptom is prolonged weight loss so FILLING OUT THE GROWTH CHART IS CRUCIAL TO DIAGNOSING HIV positive children. Other common symptoms are oral candida, ear infections (otitis) and swollen lymph glands around the neck and head. For babies there is not a definitive diagnosis. But babies are started on ART on suspicion of infection because the risks of initiating treatment are much lower than the risks of not treating. Most HIV infected babies will die before they are two years old without treatment. Babies started on treatment on suspicion of infection and a positive rapid test, should be re-tested six weeks after they finish breast feeding to check if they really are infected.

Remember there are always some laboratory test errors, and test kits can become damaged. Very rarely children who test negative with a rapid test but have symptoms of advanced HIV disease, can test positive with a DNA PCR. So clinical judgement should also be used.

Further possible questions:

- 1) A two months old breastfeeding baby has a positive DNA PCR test. Is the baby infected?
 - Yes the baby is infected. This result is definitive.
- 2) A 12 month old breastfeeding baby has a negative rapid test. Is the baby infected?
 - No the baby is not infected at this moment. But testing needs to be repeated as the baby is still exposed.
- 3) A 19 month old breastfeeding baby has a positive rapid test. Is the baby infected?
 - Yes the baby is infected.

STOP POINT

A FINAL HIV TEST NEEDS TO BE DONE AT 24 MONTHS + SIX WEEKS AFTER THE MOTHER STOPS BREASTFEEDING. WHAT WOULD YOU DO IF:

**RAPID TEST FOUND HIV NEGATIVE?
 RAPID TEST IS FOUND HIV POSITIVE?**

Negative: Stop Co-trimoxazole prophylaxis

Positive: Start ART as the child is eligible by age. Continue Co-trimoxazole prophylaxis.



Suzen's baby is having some difficulty feeding. At present her mother is giving her expressed breast milk.


STOP POINT

**FEEDING ADVICE...
 WHICH FEEDING ADVICE WOULD YOU GIVE TO THE MOTHER?**


Exclusive breastfeeding until baby age 6 months, then continue complementary feeding (breastfeeding + other foods) until age 24 months. Then should be weaned.

Mixed feeding = breast milk + formula +/- other foods in age less 6 months is not recommended!

Why is it not recommended? Because the inclusion of other food can weaken the lining of the stomach making HIV infection through breast milk a greater risk.

 *She is told to breastfeed exclusively until 6 months and then complementary feed up to two years. Suzen is told that her first child has probably been exposed to the HIV virus and could be HIV positive. She needs to go to a health centre to get the child tested.*

7 DAYS AFTER ADMISSION

 *Seven days later, Suzen's baby has started to put on weight and is now breastfeeding properly. She is now on the kangaroo ward. She is improving daily and will soon be ready to go home.*

STOP POINT

**WHAT ADVICE WOULD YOU GIVE TO THE MOTHER BEFORE SHE LEAVES THE HOSPITAL?
WHAT SIDE EFFECTS WOULD YOU TELL HER TO LOOK OUT FOR?**

1) Advice

- Vaccinations should be given
- Hygiene
- Follow up appointment
- Family planning
- Explain to Suzen why Exclusive breastfeeding until age 6 months is important.
- Give a clear message that breastfeeding is good for HIV positive and HIV negative mothers; the danger of mixed feeding when the mother is HIV positive and importance of adherence!
- Explore pressure/support from family at home. Does the father know? This is important for adherence! The fact that the husband tested negative a year ago adds weight to the worry that she might not have disclosed to him. What can be done to bring the husband to be tested again? They may be discordant couple.
- Her first born child also needs to be tested.
- Inform mother about other danger/warning signs that should warrant re-attendance at hospital. Sickness or side effects.

2) Potential side effects for baby

- The baby is on Nevirapine and will then start CPT at age 6 weeks.
- Advice to seek urgent attention if any sign of a rash or alteration in the way the skin looks, especially around eyes, mouth, genitals.