

CASE REPORT

A Case of HIV (Human Immunodeficiency Virus) Infected Child Born to HIV Positive Mother

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ABSTRACT A case of HIV infected Indonesian baby girl born from an HIV positive mother is reported. This is the first HIV infected child reported in Indonesia. The diagnosis was based on the positive DNA HIV and HIV culture in the baby's blood taken at 3 days old. At this time the baby is still asymptomatic. Despite this we gave her prophylactic treatment against *Pneumocystis Carinii* infection to prevent the possibility of *Pneumocystis Carinii* Pneumonia which is usually fatal under 1 year old. The positive HIV at 3 days old may indicative of intrauterine transmission. Because she is still asymptomatic, the intrauterine infection may be occurred during late gestation. In spite of this we hope that the HIV-infection in this baby is not a progressive one. [*Paediatr Indones* 1997;**37**:216-220]

Case Report

A full term baby girl was born spontaneously at Cipto Mangunkusumo Hospital on July 20, 1996. with a body weight of 3380 grams, body length 49 cm and Apgar score 9/10. She was the second of 2 siblings. The first child was 5 years old and was in good condition. The first child was from her first husband and they were divorced. The mother, 36-37 weeks gestation was sent to the Cipto Mangunkusumo hospital on July 3, 1996, because it was thought that she was going to deliver a baby. But it seemed that the contraction of the uterus subsided and she was sent home. Ultrasonography of the fetus revealed no congenital or growth developmental abnormalities.

The mother was known as an HIV infected woman about 4 years ago without any symptoms. For this reason she got AZT (azidotimidine, zidovudine) 5x100 mg/day orally, started on July 15, 1996. On July 19, 1996 she was referred again to the Cipto Mangunkusumo hospital for delivery. The mother G₂P₁A₀, 36-38 weeks gestation was in good condition. AZT was given orally 300 mg every 3 hours until the baby was born. She got oxytocin drips because of the presence of inertia uteri. The delivery occurred spontaneously on July 20, 1996 and was uneventful. The labor took for about 18 hours, paying attention to the preventive measures of infection.

The baby was given AZT 5 mg orally every 6 hours, for 6 weeks. Physical examination revealed a female infant in good condition. Pulse rate was 140 per minute, respiration rate 48 per minute and body temperature 36,5° C. Head circumference was 34 cm. The heart and lungs were normal. The abdomen was supple, the liver and spleen were not enlarged, there was no lymphadenopathy and there were no abnormalities in the extremities. She was fed with infant formula and the mother got bromocriptine orally to suppress the lactation.

Blood taken from the umbilical cord showed positive HIV antibody. At 3 days old, the blood was examined for DNA HIV by means of PCR (polymerase chain reaction) and HIV culture. Then the baby was discharged from the hospital in a good condition with a body weight of 3550 grams. At 1 week old (July 27, 1996) she suffered from diarrhea and was treated with co-trimoxazole, and the diarrhea subsided. The result of DNA HIV PCR revealed positive for HIV₁ subtype E (see Figure 1).

On followed up at 1 month old (August 21, 1996) the baby was still in a good condition with a body weight of 4240 grams, a body length of 53 cm and a head circumference of 38 cm. Her hemoglobin content was 16,2 g/dl, white blood cell count was 13.400/ μ l with normal differential count (lymphocyte 54%). We gave her co-trimoxazol which consisted of thrimethoprim 150 mg/m² body surface orally in two divided doses, 3 days per week intermittently. The HIV culture revealed positive result.

The baby was planned to be followed up at a primary health care and to visit the child outpatient clinic of Cipto Mangunkusumo Hospital periodically.

Discussion

This case was the first HIV infection in children reported in Indonesia. The diagnosis of HIV infection was based on the DNA HIV PCR, which showed positive for HIV₁ subtype E and also positive HIV culture. Although the IgG HIV antibody was positive in the blood taken from the umbilical cord, the diagnosis of HIV infection in this baby could not be performed based only on this. IgG HIV antibody from the mother can be transferred transplacentally to the baby, so that the presence of IgG HIV antibody alone cannot be taken as an indication of HIV infection in the baby. In order to be able to diagnose HIV infection in babies under 15 months old an other examination should be

performed such as HIV culture, detection of p 24 antigen or DNA HIV.^{2,3} In connection with this we performed the DNA HIV PCR and HIV culture.

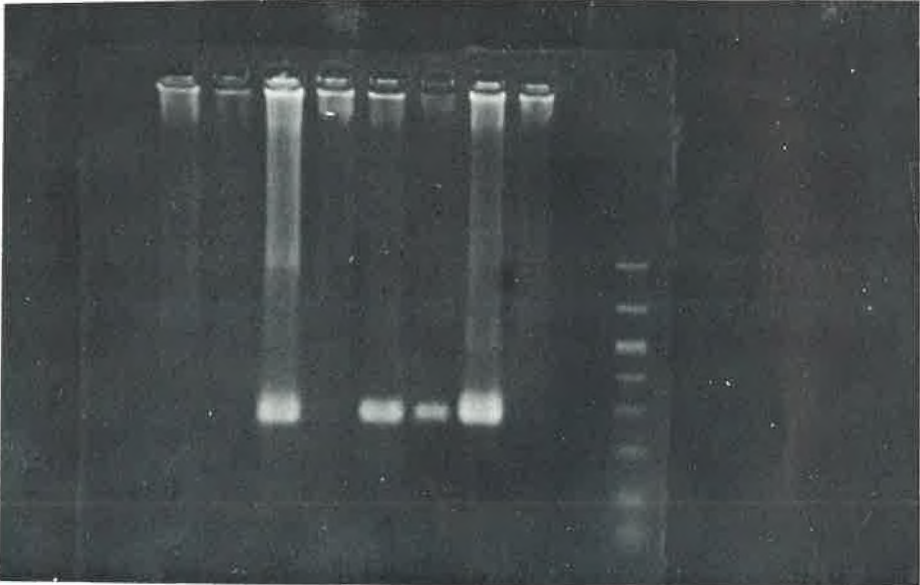


Fig 1. PCR product of mother's and baby's, visualized on 2 % agarose gel stained with ethidium bromide. Lane 1-4 (from left to right): primer B, lane 1 mother's PCR product, lane 2 baby's PCR product, lane 3 positive control, lane 4 negative control. Lane 5-8: primer E, lane 5 mother's PCR product, lane 6 baby's PCR product, lane 7 positive control, lane 8 negative control.

As mentioned in the literature, the most common way of HIV transmission in children (>80%) is vertically from HIV infected mothers to their babies.⁴⁻⁶ It is estimated that maternal to infant transmission occurs in 15% to 50% of instances⁷⁻¹⁰ and one of the factors that may play a role in the transmission is maternal virus load or viraemia.^{7,11} To reduce the virus load it is suggested to treat HIV infected pregnant women during the prenatal period and through labor with antiretroviral.^{12,13} The mother in this case had gotten AZT started only 5 days before delivery and orally. Actually, it is recommended¹³ that to reduce the maternal infant transmission about 68 %, the antiretroviral treatment should be started at 24 - 32 weeks gestation (Zidovudine 5 x 100 mg/day, orally) and continued to labor (during the first hour, 2 mg/kg body weight IV and followed by 1 mg/kg body weight IV until the baby born). In regions with limited health care resources, a short-course Zidovudine program was

proposed.¹⁴ The sub-Saharan African countries model¹⁴ consists of 2 doses of 300 mg zidovudine orally per day for the last 2 to 6 weeks prior to delivery and 300 mg zidovudine orally every 3 hours during labor. It was estimated that this model could reduce the perinatal HIV transmission approximately one half of the effect of the longer-course zidovudine.

Anyhow the fact is that the baby has been infected. Although the baby was infected by HIV, she did not show any abnormal physical findings and clinical signs of infection at birth. Indeed, it is reported that the majority of perinatally infected infants are completely asymptomatic at delivery, but will have a more rapid progression from asymptomatic to symptomatic infection compare to adult.⁶ More than 50% may develop AIDS by 2 years of age.^{15,16} Infants infected *in utero* (early gestation) may be more likely to develop early severe disease and opportunistic infection compare to those infected intrapartum.⁶ In our case, DNA HIV and HIV were already detected in her blood at 3 days old and this may indicative of intra-uterine infection.¹⁷ Because this baby still showed no abnormalities on physical examination at birth, the intrauterine transmission may be occurred during late gestation.

Children with perinatally HIV infection are prone to get opportunistic infection and the most common¹⁸ is Pneumocystis Carinii Pneumonia (PCP). PCP in HIV infected children can be fatal, especially under 1 year old and more than half of the reported pediatric AIDS related cases of PCP occur in less than 6 months old.¹⁸ For this background it is suggested,¹⁸ to give all HIV infected children under 1 year prophylactic treatment for PCP. From 1 to 5 years, prophylaxis was recommended if CD4 counts are less than 500 or less than 15% of total T-cell number. For this reason we decided to give the baby prophylactic treatment against PCP, starting at 4 weeks old.

In the beginning we gave the baby formula to avoid the possibility of transmission through breast feeding. It is stated that transmission through breast feeding can happen in 11%-29% cases.¹⁹ But the fact was that the baby had been infected. After knowing that the baby was infected, we recommended breast feeding, but unfortunately there was no breast milk any more, and we continued to give infant formula.

Two types of clinical presentations occur in perinatally HIV infected children.⁶ The first are children with earlier severe disease and progress rapidly. They are usually infected *in utero*. The disease may occur within the first 6 months of life and the mortality within the first 2 years of life. The second are those with a more indolent course and some are surviving into early adolescence or more. The positive HIV culture and DNA HIV in blood taken at 3 days old, suggested that this baby may be infected *in utero*. Despite this, we still hope of course that she is one of the slow progressors.

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