

Outcomes of Expectant Management in HIV-Infected Pregnancy with Preterm Premature Rupture of Membranes at Less Than 34-Week Gestation: A Case Series

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ABSTRACT

Objective: To present outcomes of expectant management (EM) in HIV-infected pregnancy with preterm premature rupture of membranes (PPROM) at less than 34-week gestation.

Case presentation: During January 2008-December 2015, there were 513 HIV-infected pregnant women giving birth at Siriraj Hospital, Thailand. Ten of them presented with PPRM at GA <34 weeks and six women received EM. The deliveries took place at GA 28^{2/7} - 33^{5/7} weeks. The longest interval of ROM was 15 days and the highest on-admission viral load was 633,000 copies/mL. Three of them had antepartum highly active antiretroviral therapy (HAART) for at least four weeks prior to the delivery. Mode of delivery included 3 vaginal deliveries and 3 caesarean sections. All infants' HIV molecular tests were negative at birth. The longest follow-up interval was 12 months and HIV vertical transmission remained negative.

Conclusion: Expectant management in HIV-infected women with PPRM at GA <34 weeks may be sensible because complications of prematurity outweigh the risk of vertical HIV transmission.

Keywords: Expectant management; HIV; preterm premature ruptured of membranes; vertical transmission (Siriraj Med J 2018;70: 87-90)

INTRODUCTION

Preterm premature rupture of membranes (PPROM) is defined as spontaneous rupture of membranes (ROM) before 37 completed weeks of gestational age (GA) and before labour onset.¹ The management has to weigh up the risks and benefits of expectant management (EM),² which includes antibiotics to prolong latency period and prophylaxis for Group B Streptococcus infection and a course of corticosteroids to promote fetal lung maturity.¹

For HIV-infected pregnancy, the other concern is HIV vertical transmission. The usual rate of vertical

transmission without any intervention is 35-40%. The transmission rate can be 1% or less in pregnant women complying with their anti-retroviral therapy and other perinatal recommendations.³ Previous studies demonstrated the higher risk of vertical transmission in ROM >4 hours⁴ and showed a 2% increase in transmission risk every hour following ROM in term pregnancy.⁵ Accordingly, HIV-infected pregnancy with PPRM tends to be terminated early. However, there is no consensus management for HIV-infected pregnancy with PPRM at GA <34 weeks. Thus, this case series aimed to reveal the outcomes of managing this population expectantly.

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CASE PRESENTATION

After ethical approval (Si 568/2559 (EC2)), medical records of all HIV-infected pregnant women who delivered during January 2008 to December 2015 in Siriraj Hospital, Thailand, which is a tertiary hospital with 9,000 deliveries per year, were reviewed. Focusing on those who presented with PPRM at GA <34 weeks who received EM, baseline characteristics, maternal outcomes and neonatal outcomes were retrieved.

During January 2008 to December 2015, there were 513 HIV-infected pregnant women delivered at Siriraj Hospital. Ten of them presented with PPRM at GA <34 weeks and 6 women received EM. Maternal mean age (\pm standard deviation) was 20.6 ± 6.8 years. Three patients attended antenatal care (ANC) before GA 24 weeks. One patient had a twin gestation. All patients were not aware of their HIV serostatus prior to pregnancy and two had never had any ANC. Highly active antiretroviral therapy (HAART) was initiated by second trimester in 3 women (case nos. 2, 5, 6), including zidovudine (AZT)+lamivudine (3TC)+lopinavir/ritonavir (Kaletra[®]) for case no. 2, GPO vir Z (nevirapine (NVP)/AZT/3TC) for case no. 5 and tenofovir (TDF)+3TC+efavirenz (EFV) for case no. 6. One patient had anogenital wart. None of the patients had opportunistic infections, hepatitis B/C nor syphilis.

The GA at PPRM was $26^{1/7}$ - $33^{3/7}$ weeks. The interval to delivery was 2-15 days. Case nos. 2, 5, 6 continued the same HAART regimen while the rest commenced AZT+3TC+Keletra[®] regimen. Intrapartum AZT was given to all women except for case no. 1. As this case occurred before implementation of national guideline for intrapartum AZT.⁶ All women received a full course of steroids. All but case no. 3 received antibiotics to prolong latent phase of labour. Three cases underwent caesarean section due to non-reassuring fetal status.

All infants' birthweights were appropriate for GA. Neonatal complications appeared related with fetal prematurity rather than HIV infection. Infant born to case no. 1 had birth asphyxia, respiratory distress syndrome (RDS), sepsis, jaundice, hypoglycemia, Varicella Zoster infection, Rotaviral enteritis and bronchopulmonary dysplasia. Infant born to case no. 2 had sepsis, jaundice, hypoglycemia, Pseudomonas conjunctivitis. Infant born to case no. 3 was healthy. Infant born to case no. 4 had sepsis, jaundice, intraventricular hemorrhage and RDS. Infants born to case no. 5 and no. 6 had jaundice and hypoglycemia.

All infants received AZT syrup for four weeks after birth and exclusive formula feeding. All infants' HIV molecular tests were negative at birth. The longest follow-up interval was 12 months and HIV vertical transmission remained negative.

DISCUSSION

All of our case series occurred before the implementation of guideline to follow up baby born to HIV-infected mother for the period of 18 months. With limited available data (follow up period of 12 months), our case series shows that EM for HIV-infected pregnancy with PPRM at GA <34 weeks results in no vertical transmission. Maternal and fetal complications appear more related to prolongation of ROM and prematurity rather than HIV infection. The findings were compatible with a previous report in 2006 that HIV-infected pregnant women who received HAART at the onset of PPRM did not transmit HIV to their offsprings.⁷

Other factors which increased the transmission rate included high viral loads, low CD4 cell count, coincident sexually transmitted infections and chorioamnionitis.^{8,9} In addition, vaginal delivery has been known to enhance the transmission due to prolonging infant's exposure to the contaminated maternal blood and vaginal fluid.⁹ However, there is no such effect in our series.

Currently, HAART regimen is recommended for all pregnant women at all gestational ages¹⁰ to eliminate vertical transmission of HIV. However, pregnancy with no/poor ANC should be an issue if interest as there is much higher prevalence of HIV infection and preterm birth.¹¹ In addition, the greatest likelihood of the vertical transmission occurs in new HIV infection during pregnancy.¹² The present study supports that, even in real settings like Thailand where no/ poor ANC at up to 2% of deliveries were reported,¹¹ and the benefit of prolonging pregnancy outweighs the risk of the vertical HIV transmission.

CONCLUSION

Expectant management in HIV-infected women with PPRM at GA <34 weeks may be sensible because complications of prematurity outweigh the risk of vertical HIV transmission.

Declaration of interest: The authors report no conflicts of interest.

TABLE 1. Expectant management and pregnancy outcomes in HIV-infected pregnancy with preterm premature rupture of membranes at less than 34-week gestation.

Case No.	GA at first ANC	GA at initiation of HAART (weeks)	GA at PPROM	Viral load at PPROM (copies/mL)	CD4 count at PPROM (cells/mm ³)	HAART at PPROM	Interval to delivery	Mode of delivery	Chorioamnionitis	Birth weight (g)	Vertical transmission
1	No ANC	None	26 1/7	633,000	38	AZT +3TC+ Kaletra®	15 days	C/S	Yes	920	*Negative at birth, 1, and 2 mo **Negative at 1 yr
2	23 1/7	23 1/7	32 2/7	N/A	N/A	AZT +3TC+ Kaletra®	2 days	C/S	No	1,840	*Negative at birth, 1, and 2 mo **Positive at 1 yr
3	No ANC	None	31	3,409	596	AZT +3TC+ Kaletra®	2 days	SVD	No	2,160	*Negative at birth
4	24	None	30 1/7	3,960	286	AZT +3TC+ Kaletra®	4 days	SVD	No	1,250	*Negative at birth, 1, 2, 4, and 6 mo
5	7	8	33 1/7	430	256	GPO vir Z	2 days	C/S	No	1,810 1,730	A/B: *negative at birth and 1, 2, and 4 mo
6	10	20	33 3/7	N/A	N/A	TDF+3TC +EFV	2 days	SVD	No	1,890	*Negative at birth, 1, and 2 mo

* HIV DNA PCR detection

** HIV antibody detection (ELISA)

Abbreviations: PPROM: preterm premature rupture of membranes; GA: gestational age; ANC: antenatal care; C/S: caesarean section; HAART: highly active antiretroviral therapy; AZT: zidovudine; 3TC: lamivudine; Kaletra: lopinavir/ritonavir; GPO Vir Z: nevirapine/lamivudine/zidovudine; TDF: tenofovir disoproxil fumarate; EFV: efavirenz; N/A: data not available.

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