

Characteristics and Delivery Outcome in HIV-Positive Pregnant Women with Per Vaginum Methods from 2017 Until 2022 at Wangaya Hospital, Bali

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ABSTRACT

Background: HIV in pregnancy have become complication which happen in low-income country. HIV in pregnancy also have big impact in pregnancy and labour management. HIV perinatal transmission was ranged between 15%-40% without antiretroviral treatment and varies between nations. Lot of factors will determine the transmission which still make the transmission still have a large number in pregnancy.

Method: This study was an observational-descriptive study with retrospective research design in order to study the characteristics and outcome of HIV in pregnancy during per vaginum labor in Wangaya Hospital, Denpasar, Bali along September 2017 until September 2022.

Results: Using 15 samples showed about 10 women (66.67%) was around 20-35 years old. From 15 sample, 8 were multigravida (53.33%), 8 were at least had done delivery once (53.33%). 3 women (20%) were premature (<36 weeks) and 12 women were mature (36-40 weeks). Only 3 women (20%) were on treatment of ARV during labor. 6 baby (40%) were boys and 9 were girls (60%), only 3 babies (20%) had low body birthweight. Only 1 (6.67%) who had score below 7. And all the babies had no abnormality after delivery (100%).

Conclusion: Dominantly the pregnant women with HIV positive around 20-35 years old, and had delivery at least once. Only 3 from the sample had started ARV treatment, it was only 1

newborn baby with APGAR score below 7 and all the newborn baby had no abnormality.

Keywords: HIV, ARV, Pregnancy, Delivery

INTRODUCTION

Human Immunodeficiency Virus (HIV) is a retrovirus group which belongs to lentivirus genus that can infected and disturbed cell function of human antibody systems and decreasing antibody defence as the outcome. The infection very related with Cluster of Differentiation 4 (CD4), where the virus will force this cell become decreased and those will be determined as *Acquired Immunodeficiency Syndrome* (AIDS). In this state, the decreasing antibody number will be at the lowest peak which could make someone's susceptible with most opportunistic diseases. This type of virus also can be transmitted through mechanisms which one that become concern was Mother to child transmission (MTC).^{1,2,4,5,11,12}

UNAIDS in 2021 have reported about 38.4 million people were infected with HIV globally, with 1.5 million new cases. In east and southeast Asia on the same year, reported about 6 million adults and children infected with HIV, which 140.000 case was AIDS-related death and those number also includes pregnancy women with HIV. In Indonesia on 2020, HIV in pregnancy was reported about 6094 cases from 2.404.754 pregnant women whom examined. In Bali

on the same year also reported high number case of new case of HIV (at about 1655 cases) with new case of 193, with HIV in pregnancy were included.^{6,7,8}

Factors which affected MTC includes HIV viral loads which considered high HIV concentration above 100.000 copy/ml. It also be affected by low number of CD4, with combined by nutritional status in pregnancy where lack of folic acid, vitamin D, calcium, iron and minerals would increase risk of HIV transmission. Obstetric factors also have impact in this transmission, which includes type of labor where per vaginum have greater risk of transmission than cesarean methods. Longer labor duration also increased perinatal transmission. Studies also reported high incident of transmission intrapartum through blood which produced from episiotomy, vaginal laceration, infected genital secret, breast milk or labor with forceps, based on said factors, the vertical transmission could be 25 to 30% accident in HIV in pregnancy.^{3,10}

Most of MTC happens during labor process, which make this process becomes vital to prevent vertical transmission. To prevent it, one must avoid Premature Rupture Of Membrane (PROM). Also needs to avoid use of forceps and vacuum because longer duration of labor increases the risk of transmission. Caesarean Section on 38 weeks gestational age before labor onset were recommended to pregnant women with HIV whom already have Anti Retro Viral (ARV) Therapy with viral load above 1000. For per vaginum labor only recommended for pregnancy women whom already have ARV with viral load below 50.^{1,2,4,10}

Based on increased number of HIV in pregnancy, the writers would like to study the characteristic of pregnancy women with HIV and outcome of newborn baby through normal labour in Wangaya Hospital, Denpasar, Bali.

METHODS

This study was a observational-descriptive study with retrospective research design in

order to study the characteristics and outcome of HIV in pregnancy during per vaginum labor in Wangaya Hospital, Denpasar, Bali. The sample taken using *total sampling* method, which means all pregnancy women with HIV positive whom done the labor per vaginum in Wangaya Hospital along September 2017 until September 2022 which fulfill the inclusion criteria. From the sampling, study analyze 15 cases of HIV-positive pregnant women doing per vaginum labor of said range of time. The variable used in this study was the characteristics (includes mother's age, gravida status, parity amount, gestational age, ARV treatment status) and outcome (includes birthweight, APGAR score, presence of abnormality). Data were collected and analyze with *Statistical Package for the Social Sciences* (SPSS) 21.0, also presented through charts.

RESULTS

In this study, which using 15 sample of HIV-positive pregnant women whom had per vaginum labor along September 2017 until September 2022. From characteristic of sample showed that from 15 sample, 1 woman (6.67%) was below 20 years old, about 10 women (66.67%) was around 20-35 years old and the rest of sample was above 35 years old (26.67%). From 15 sample, 7 were primigravida (46.67%) and the others were multigravida (53.33%). Also 7 of them were never had labor (46.67%) and the other 8 were at least had done delivery once (53.33%). From the gestational age, 3 women (20%) were premature (<36 weeks) and 12 women were mature (36-40 weeks). Only 3 women (20%) were on treatment of ARV during labor. From the outcome after the labor, 6 baby (40%) were boys and 9 were girls (60%), only 3 babies (20%) had low body birthweight and the other were born with normal weight (80%). From APGAR score, only 1 (6.67%) who had score below 7 and the rest had APGAR score above 7 (93.3%). And all the babies had no abnormality after delivery (100%)

DISCUSSION

In this study, the writers analyze the characteristics of HIV-positive pregnant women with per vaginum labor around 2017-2022 with 15 sample. From these sample, the characteristics which been analyze in this study was ages, grvida status, parity amount also evaluating gestational age and ARV treatment in sample. The outcome of labor which analyzed was birthweight, APGAR Score and abnormality of newborn baby.

HIV-positive pregnancy according to CDC in 2019 was counted for 34.800 new cases in USA, which in terms of mother's age around 13-24 years old, 25-34 years old, 35-44 years old, 45-54 years old and above 55 years old. It's showed that the most cases were around 25-34 years old. It is in accordance to study which showed 66.67% sample or 10 HIV-positive pregnant women around 2017 until 2022 was on age of 20-35 years old.¹²

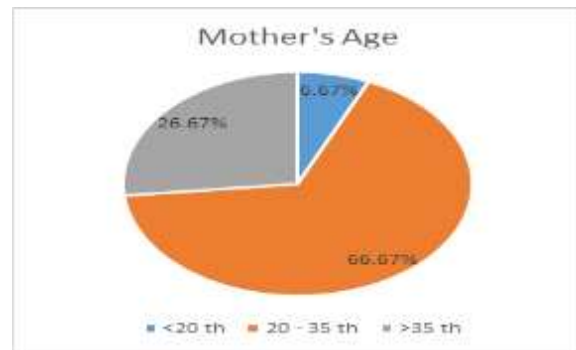


Chart 1. Mother's Age during Pregnancy

The study showed from 15 samples, 7 of them were had first pregnancy (46.47%) while the rest of sample have had multiple pregnancy (53.33%). It was correlated with other study conduct in different major hospital in Bali which reported most case of multigravida in 117 cases and considered as productive ages. This study also concluded from 15 samples, 7 of them never had labor before (46.47%) while the rest of sample have had delivery at least once (53.33%). It was also had similarity with other study, which included 102 samples of HIV-positive pregnant women, which from the sample predominantly have delivery at least once (91 samples or 89.2%).^{13,14}

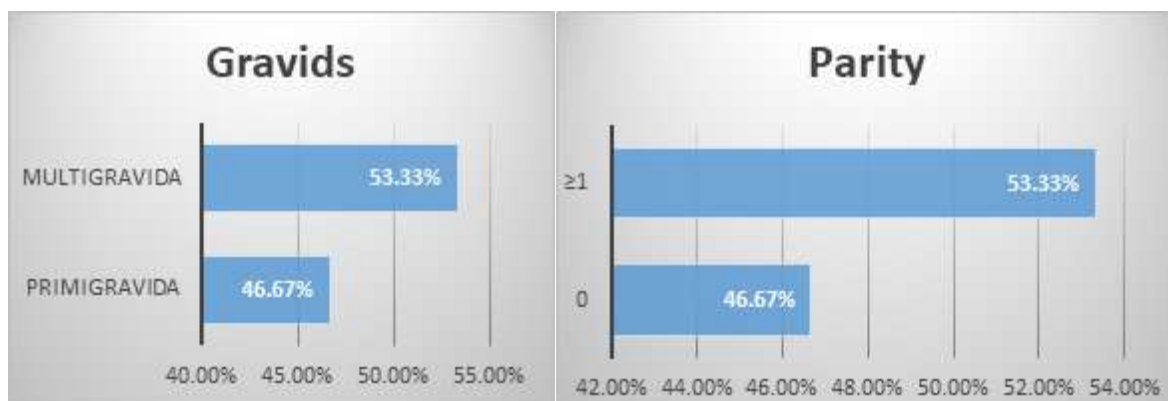


Chart 2. Characteristics Based on Gravids and Amount of Parity

The gestational characteristics in this study also concluded 3 women (20%) were in premature ages (<36 weeks) and 12 women were mature (36-40 weeks). It was correlated with other study which showed 195 cases were mature pregnancy with HIV when terminated and 70 of them were premature. This study also analyzes the treatment of ARV which been administered during pregnancy, where it concluded that

only 3 women (20%) were on treatment of ARV during labor. This was contradicted with studies which used 273 samples of HIV in pregnancy which concluded that there were only 30 samples were not using ARV treatment.¹⁴

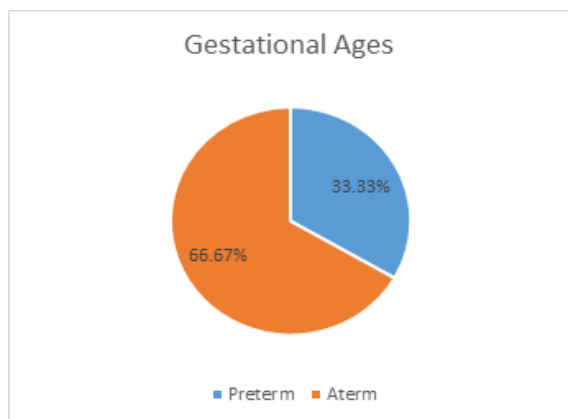


Chart 3. Characteristics based on Gestational Ages

This study analyzes the outcome after the labor, 6 baby (40%) were boys and 9 were girls (60%) and only 3 babies (20%) had low body birthweight and the other were born with normal weight (80%). It was similar to other study which used 52 samples of HIV in pregnancy, where only 9 babies (17.3%) were born with birth weight under 2500 grams.¹⁵

APGAR score was analyzed in this study, where HIV-positive pregnant women have bigger risk to delivered low APGAR score baby (<7), it was correlated with asphyxia because of maternal infection which resulted in fetal's lung surfactant synthesis and secretion became disrupted. In this study, only 1 (6.67%) who had score below 7 and the rest had APGAR score above 7 (93.3%). And all those samples, had no abnormality in the newborn baby (100%). It was similar in other study, from 43 samples only 9 which had APGAR score below 7 and the other 34 samples had APGAR score above 7, and from other study which analyzed abnormality of 41 newborn baby with HIV-positive pregnant mother, also concluded that all the newborn one had no abnormalities.¹⁶

CONCLUSION

In this study, we studied the characteristics and outcome of HIV in pregnancy during per vaginum labor in Wangaya Hospital, Denpasar, Bali along September 2017 until September 2022. Which showed dominantly the pregnant women with HIV positive around 20-35 years old, and had delivery at

least once. Although only 3 from the sample had started ARV treatment, the outcome which analyzed from APGAR score, it was only 1 newborn baby with score below 7 and all the newborn baby had no abnormality. This study can be analyzed further in future with extended samples which later can be study the relation between the characteristic and the delivery outcome.

Declaration by Authors

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Conflict of Interest: The authors declare no conflict of interest.

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