

## Original Research Article

# Profile of triple elimination in maternal at Wangaya regional hospital in 2023

Ogek Dwi Shavitri\*, Ketut Suryana

Department of Internal Medicine, Wangaya Regional Hospital, Denpasar, Bali, Indonesia

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### \*Correspondence:

Dr. Ogek Dwi Shavitri,

E-mail: [ogekdwi25@gmail.com](mailto:ogekdwi25@gmail.com)

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## ABSTRACT

**Background:** Triple elimination is a program implemented by the Ministry of Health of the Republic of Indonesia, this program was adopted from the World Health Program or WHO to combat the transmission of HIV (Human immunodeficiency virus), syphilis and hepatitis B in pregnant women to their babies. The aim of this study of this research is to determine the profile of pregnant women who undergo triple elimination testing.

**Methods:** This study was a descriptive observational study with a retrospective study design. The data was collected from the medical records of pregnant women at Wangaya Regional Hospital from January 2023 to December 2023.

**Results:** In this study involving 101 subjects, in this study, there were 65 people who underwent triple elimination examination and 36 people did not undergo triple elimination. These included HIV with 13 cases (12.8%) and hepatitis B with 4 cases (3.9%) and syphilis with 2 cases (1.98%).

**Conclusions:** The triple elimination screening is a mandatory examination for pregnant women conducted during the first trimester of pregnancy. Pregnant women who do not undergo the triple elimination screening may lack knowledge, sufficient information and proper education and communication from healthcare providers about the triple elimination program. Improving these factors will enhance pregnant women's motivation to utilize and access healthcare services.

**Keywords:** HIV, Hepatitis B, Triple elimination

## INTRODUCTION

Human Immunodeficiency Virus (HIV), Syphilis and Hepatitis B are infectious diseases transmitted from mother-to-child and are a health problem in the world including Indonesia. According to research data, more than 90% of infectious diseases directly in babies are transmitted from mothers infected with HIV, syphilis and Hepatitis B. This transmission can occur vertically which can occur during pregnancy, childbirth and during breastfeeding.<sup>1</sup> Triple elimination is a program implemented by the Ministry of Health of the Republic of Indonesia, this program was adopted from the World Health Program or WHO to combat the transmission of HIV (Human immunodeficiency virus), syphilis and hepatitis B in pregnant women to their babies.<sup>2</sup> According

to government regulation number 52 of 2017 article 2 concerning the elimination of transmission of HIV, Syphilis and hepatitis B from mother to child, it explains that there are three important points that are of special concern, namely, reducing morbidity, disability and death due to HIV, syphilis and hepatitis B, stopping the transmission of HIV, syphilis and hepatitis B from mother to child, obligations for the central government, local governments, health workers and other stakeholders in carrying out elimination of transmission.<sup>2,3</sup> Mother-to-child disease is one of the public health problems that still requires special attention. There is a goal of the formation of 3E is to break the chain of transmission which is useful for achieving the target of 3 Zero's, namely zero new infections (zero death, zero stigma and discrimination).<sup>2</sup> In 2023, there were 3,245,224 pregnant women who were

tested for HIV in Indonesia. From the examination, 2,490 (0.08%) pregnant women were found to be HIV positive. The percentage of pregnant women who underwent early diagnosis hepatitis B in 2023 according to province was 68.4% of pregnant women who underwent early diagnosis hepatitis B from the target number of pregnant women in 2023 of 4,907,227 pregnant women. The number of pregnant women who were tested for Hepatitis B using the HBsAg RDT in 2023 was 3,358,549 people or 68.4% of the target pregnant women. The results of the HBsAg RDT examination in 2023 found that 50,789 or 1.5% of pregnant women showed reactive results. In 2023, there were 36.5% of pregnant women who underwent Syphilis examination, of which 0.48% of pregnant women were declared positive.<sup>4,5</sup>

Efforts made to eliminate HIV, syphilis and hepatitis B must be carried out in an integrated manner by all related agencies. Realizing that there are still problems in the 3E elimination activities, it can be assumed that there is something that still needs to be fixed. The final output is that in 2022, it is hoped that Indonesia will be able to break the chain of transmission of HIV, syphilis and hepatitis B which will have an impact on improving the health of the community, especially mothers and children. Therefore, it is necessary to re-analyze several things in the implementation of screening for the elimination of HIV, Syphilis and Hepatitis B transmission from mother to child at Wangaya Regional General Hospital.

## METHODS

### Study type

This study is a quantitative type using descriptive observational study with a cross-sectional design.

### Ethical approval

This research obtained ethical approval from the Wangaya Hospital Denpasar Bali research ethics committee with reference number 000.9.2/7150/RSUDW.

### Study place

This research was conducted at Wangaya Hospital, Bali Indonesia.

### Study duration

The study period was from January 2023 to December 2023. The sample for this study used the medical records of pregnant outpatient women.

### Sampling method

The sampling technique used was purposive sampling, where samples were taken based on inclusion and exclusion criteria.

### Inclusion criteria

The inclusion criteria included Pregnant women patients visiting Wangaya regional hospital for the first time, patients aged >18 years and pregnant women who undergo triple elimination examination.

### Exclusion criteria

Exclusion criteria included the age of the patients <18 years, incomplete medical record data and discharge against medical advice. The study variables included the triple elimination MTCT program coverage, number of pregnant women tested and infected with HIV (diagnose with rapid HIV test), syphilis (diagnose with rapid treponema pallidum (TP) test) and HBV (diagnosed by rapid HBsAg test), at Wangaya Regional General Hospital. The sample consists of HIV/AIDS patients who received treatment at Wangaya Regional General Hospital in 2023.

The subject approach in this study is data collection is done by collecting secondary data, in the form of medical records of outpatients of pregnant women. The data is then tabulated, concluded and presented in the research report.

## RESULTS

The characteristics of the subjects, as shown in table 1, showed that the majority were aged 20-35 years (95.0%), the majority were multipara pregnant women (75.2%) and level of education majority were secondary school (65.3%). Based on several studies, the average age is divided into < 20 years, 20-35, > 35 years.<sup>7</sup> In this study, out of 101 subjects. In this study, there were 65 people (64.3%) who underwent triple elimination examination and 36 people (35.6%) did not undergo triple elimination (Table 2). The overviews of triple elimination result patients can be seen in Table 3. Based on result of triple elimination screening the number of HIV positives was shown to be with 13 individuals (12.8%). the number of positive hepatitis B was shown to be with 4 individuals (3.90%). The number of positive syphilis was shown to be with 2 individuals (1.98%).

**Table 1: Characteristic of subject.**

Characters	N	%
<b>Maternal age (in years)</b>		
<20	0	0
20-35	96	95.0
>35	5	4.95
<b>Parity</b>		
Primipara	25	24.7
Multipara	76	75.2
<b>Level of education</b>		
Elementary school	15	14.8
Secondary school	66	65.3
Undergraduate	20	19.8

**Table 2: Triple elimination screening.**

Triple Elimination	N	%
<b>Yes</b>	65	64.3
<b>No</b>	36	35.6
<b>Total</b>	101	100

**Table 3: Triple elimination result.**

Results	N	%
<b>HIV</b>		
Reactive	13	12.8
Non-reactive	88	87.1
<b>Hepatitis B</b>		
Positive	4	3.90
Negative	97	96.0
<b>Syphilis</b>		
Positive	2	1.98
Negative	99	98.0

## DISCUSSION

Triple elimination is a government program that aims to achieve and maintain the elimination of mother-to-child transmission of human immunodeficiency virus (HIV), hepatitis B and syphilis in order to achieve better health for women, children and their families through a coordinated approach.<sup>6</sup> Prevalence of Human Immunodeficiency Infection The risk of transmission is 20-45% in human immunodeficiency virus (HIV), 69-80% in syphilis and 90% in hepatitis B.<sup>7,17</sup> This indicates that these three diseases have a high risk of morbidity and mortality for the mother and her child.

In our study, 65 pregnant women (64.3%) underwent triple elimination screening and 36 pregnant women (35.6%) did not undergo triple elimination screening. According to a study conducted by Octaviana et al it was shown that 95% of pregnant women underwent triple elimination examinations out of 1655 samples. However, based on a study conducted by Veronica, pregnant women who underwent triple elimination examinations were 27% out of 75 samples. This is due to the lack of sources of information received by pregnant women.

Sources of information play a very important role in human actions and decision-making, as well as in determining attitudes. The increasing curiosity of pregnant women encourages pregnant women to obtain information from various sources. The information a person receives from various sources affects their knowledge, the more information a person receives from various sources, the more likely they are to have a good attitude or decision-making towards something.<sup>11,18</sup>

In addition, according research by Veronika et al, mothers who receive good information will increase their awareness and develop a positive attitude towards the Triple Elimination test, but mothers with low education do

not always receive information. Information can also be obtained from informal education, training, self-development or experience. Knowledge about something has positive and negative aspects that are influenced by the environment, social, personal experience.

The low level of screening implementation is caused by the lack of adequate health literacy. In this case, counseling and delivery of appropriate information by health workers regarding the triple elimination program will increase the motivation of pregnant women in utilizing and accessing health services, as well as trying to get early detection of HIV, syphilis and hepatitis B.<sup>11,12</sup>

However, in several other countries such as Afghanistan and the sub-Saharan African region, progress has been shown to be the opposite, that the triple elimination program is running slowly due to the lack of policies, strategies and resources to support the implementation of prevention and treatment interventions, correct and comprehensive knowledge on these three diseases.

Factors that can contribute to the success of the triple elimination program include the availability of quality antenatal care (ANC) services, the implementation of routine examinations during pregnancy, prompt management of follow-up care and well-organized monitoring and surveillance in healthcare facilities.<sup>12</sup> According study by Puspasari et al that states that the role of healthcare workers, peers and partners is very important in providing support to pregnant women in undergoing necessary tests and treatments.

In our study, we analyzed 101 samples, From the results of triple elimination, it was found that 13 (12.8%) pregnant women were diagnosed with HIV infection and 4 (3.9%) pregnant women were infected with Hepatitis B Virus (HBV) and 2 (1.98%) pregnant women were infected with syphilis. This study is in line with the research conducted by Nurul in 2022, which found 29 HIV patients (4.2%), 3 syphilis patients (0.4%) and 26 hepatitis B patients (3.8%).

Among them, there were 2 patients (0.3%) with co-infection of HIV and hepatitis B. The most common risk factor for HIV was having a partner with an HIV risk factor, identified in 23 patients (79.3%).<sup>14</sup>

The implementation of the triple elimination program in Indonesia has achieved screening coverage that meets WHO criteria. The number of cases of the three diseases among pregnant women has become low (below the maximum percentage of infected pregnant women), with no pregnant women suffering from more than one of the three infectious diseases.<sup>13</sup>

According to Nguyen et al, in Vietnam, the implementation of the triple elimination program is ongoing and the results show that the number of infections from the three preventable diseases is as follows: The coverage of HIV, HBV and syphilis testing for pregnant

women is 98%. The prevalence of HIV infection is 0.14%, hepatitis B virus infection is 7.8% and syphilis infection is 0.03%. In this triple elimination program, HBIG vaccination and prophylactic treatment for HIV and syphilis are also provided to newborns from infected mothers, resulting in no infants infected with HIV or syphilis. However, HBV infection was diagnosed in 27 infants (13.9%) who tested positive. It is estimated that 23 cases of HBV transmission from mother to baby were prevented through this triple elimination intervention.

According to the research conducted by Wardiana et al, based on Indonesia's health profile in 2020, there were 2,404,754 pregnant women who had been tested for HIV. From this examination, 6,094 (0.25%) were found to be positive. For syphilis testing, 753,669 pregnant women were tested and 4,198 were found positive. In 2020, 51.37% of 5,221,784 pregnant women underwent early detection for hepatitis B. Compared to national screening in Indonesia, this is a much lower figure than studies in the Netherlands.

The estimated coverage of screening programs for HIV, syphilis and hepatitis B in the Netherlands was >99% in all years from 2009 to 2015. In the triple elimination program, the target coverage set by WHO for testing HIV, syphilis and hepatitis B in pregnant women is  $\geq 95\%$ .<sup>13,15</sup> Meanwhile, the Ministry of Health of the Republic of Indonesia states that to achieve complete quality detection of ANC, the coverage in 2018 should be at least 60% of pregnant women tested for HIV, syphilis and hepatitis B.<sup>20</sup>

The low coverage in this study could be due to newly established policies set in 2017, so detection has not yet been routinely performed. Another cause is the omission of registration. The majority of subjects in this study were referral patients who may have been screened for HIV, syphilis and hepatitis B in previous healthcare.

The study was conducted in a single hospital with a small sample size. So, the results may not represent the whole community.

## CONCLUSION

The triple elimination screening is a mandatory examination for pregnant women conducted during the first trimester of pregnancy. Pregnant women who do not undergo the triple elimination screening may lack knowledge, sufficient information and proper education and communication from healthcare providers about the triple elimination program. Improving these factors will enhance pregnant women's motivation to utilize and access healthcare services.

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