World Journal of Advanced Research and Reviews
eISSN: 2581-9615 CODEN (USA): WJARAI
Cross Ref DOI: 10.30574/wjarr
Journal homepage: https://wjarr.com/

(CASE REPORT)

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Case series: High-risk pregnancy monitoring in cases of pregnant women with reactive Hepatitis B

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World Journal of Advanced Research and Reviews, 2025, 25(03), 702-707

Publication history: Received on 29 January 2025; revised on 06 March 2025; accepted on 08 March 2025

Article DOI: https://doi.org/10.30574/wjarr.2025.25.3.0763

Abstract

Objectives: Chronic Hepatitis B remains a global health issue, with 254 million individuals affected and 1.1 million deaths annually. In East Java, the prevalence of Hepatitis B among pregnant women reached 5.2% in 2023, indicating a significant risk of vertical transmission. Managing Hepatitis B during pregnancy requires a comprehensive approach to prevent complications and transmission to the newborn.

Case Series: This case report involves a 35-year-old woman, 30 weeks pregnant in her fifth pregnancy diagnosed with reactive Hepatitis B and a complex obstetric history, including multiple abortions and retained placenta. Her pregnancy was classified as high-risk with a Poedji Rochjati score is 22. The patient was referred for HBV DNA testing after diagnosis, with education provided on the disease and vertical transmission prevention. Follow-up care was scheduled at a Type A hospital equipped for high-risk pregnancies. The baby will receive Hepatitis B vaccination and HBIG immediately after birth.

Conclusion: Pregnancies complicated by reactive Hepatitis B require comprehensive management, including patient and family education, routine medical monitoring, and careful birth planning. The Continuity of Care (CoC) approach ensures ongoing monitoring from pregnancy through postpartum. Collaboration between the patient, family, and healthcare providers is essential for minimizing complications, preventing vertical transmission, and ensuring the safety of both mother and baby.

Keywords: Hepatitis B; Pregnant Women; Vertical Transmission; Pregnancy Management; Continuity of Care

1. Introduction

According to the World Health Organization (WHO), by 2022, about 254 million people in the world are living with chronic Hepatitis B, with 1.2 million new infections each year and 1.1 million deaths mostly caused by complications such as cirrhosis and liver cancer. These data reflect that Hepatitis B is a serious global health problem. In East Java, the prevalence of Hepatitis B in pregnant women reached 5.2% in 2023.[1-17]

Cases of pregnant women with reactive Hepatitis B are of particular concern due to the potential complications that can occur during pregnancy and labor. Pregnant women with Hepatitis B infection have a higher risk of health problems, including impaired liver function, bleeding, and other complications. Moreover, Hepatitis B infection can be passed from mother to baby during labor, with the risk of transmission reaching 90% if the mother is HBeAg positive. Therefore, prevention of mother-to-infant transmission is a top priority in the management of pregnancy and delivery in pregnant women diagnosed with Hepatitis B.[2-14]

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In Indonesia, the prevalence of Hepatitis B in pregnant women ranges from 1.6%-10%, depending on the region and social conditions. Higher rates are usually found in areas with limited access to health services and low levels of knowledge about Hepatitis B prevention[15]. In addition, risk factors such as poor obstetric history, including abortion and preterm labor, can worsen the health conditions of mothers and babies[3]. Management of pregnant women with reactive Hepatitis B requires a planned approach, including close monitoring of maternal and fetal health and medical intervention to prevent complications. Educating the mother and family about modes of transmission, the importance of newborn vaccination, and other prevention strategies are also important components of the management of this disease.[3]

This case report aims to evaluate the health risks faced by pregnant women with reactive hepatitis B, including complications during pregnancy and labor, and to illustrate the importance of regular health monitoring and appropriate medical interventions to reduce the risk of complications. In addition, this report presents effective strategies in preventing vertical transmission from mother to baby through education and comprehensive medical management. Public and medical personnel awareness on the risks, prevention, and management of Hepatitis B is also a key focus to support improved health services. This report is expected to provide the best recommendations for the management of high-risk pregnancies related to Hepatitis B, improve access to health services, and serve as a basis for further research to optimize prevention and treatment strategies in the future.

2. Case series

The assessment was conducted on a 35-year-old woman, residing in one of the TPMB in Surabaya. The current pregnancy was her fifth pregnancy with a gestational age of 30 weeks with a history of abortion twice, giving birth to full-term babies twice, and having one living child. The patient came for pregnancy control and showed her referral letter from type B hospital to type A hospital for HBV DNA testing after being diagnosed with Hepatitis B reactive during her K1 access visit at the local health center. The patient's husband said that they wanted services at another type B hospital closer to where they lived because they were traumatized by the previous experience. However, the patient was convinced by the midwife to follow the referral pathway to type A RSUD, which has more adequate facilities to handle high-risk pregnancies like this. Then, the couple decided to give birth at the type A RSUD with BPJS financing.

Based on subjective data, the patient did not complain of any problems at this time. Menstrual history showed a regular cycle of 29-30 days with the first day of the last menstruation on February 1, 2024. Complex obstetric history includes the first pregnancy spontaneously with a currently healthy child, the second and third pregnancies were aborted without knowing the cause, and the fourth pregnancy was born spontaneously with infant death due to asphyxia and there was a complication of labor in the form of placental retention so that it required manual placenta. Currently, the patient is pregnant with her fifth child with a gestational age of 30 weeks. TT immunization has been completed up to the 5th TT. In the first trimester, the patient had two antenatal check-ups and received vitamins such as folic acid and calcium, which she did not consume regularly.

The patient's contraceptive history included the use of injectables for two years after the first child. The patient had no history of hypertension, diabetes, asthma, or other infectious diseases. Family support, especially from the husband, was good. The mother's nutritional pattern includes food consumption 2-3 times a day with adequate portions, but the patient does not like vegetables, fruits, and rarely consumes red meat. In addition, the patient often drinks iced tea after meals and only consumes about 1 liter of water per day. Elimination, rest, and daily activity patterns were observed to be good. Personal hygiene was maintained by bathing twice/day, all family members had their own toothbrushes, but there was no control of whether the toothbrushes were used together.

General examination showed that the patient was in good condition with normal vital signs: blood pressure 112/70 mmHg, body temperature 36.5°C, pulse 80x/min, and respiration 18x/min. The patient's weight increased from 62 kg before pregnancy to 70 kg, with a BMI of 28 kg/m^2. Physical examination showed a face without edema, conjunctiva not anemic, eyes not icteric, active fetal movements, and DJJ 140x/min. Laboratory results showed hemoglobin 11.9 g/dL, negative urine albumin, negative urine protein, reactive HBsAg, and negative HIV and syphilis. Ultrasound examination showed a single live intrauterine fetus with head presentation. Based on the Poedji Rochjati score, this pregnancy was categorized as high risk with a score of 22.

The patient admitted that she had never known or received treatment related to Hepatitis B in previous pregnancies because she had never undergone a similar examination. The patient's knowledge about Hepatitis is limited to Hepatitis is a disease that attacks the Liver organ. The patient did not know about the causes of the disease, risks, transmission routes, therapies needed and prevention of vertical transmission in pregnant women with Hepatitis B and screening that must be done in the family.

Education was provided by the midwife regarding the causes of Hepatitis B disease, routes of transmission, risks to mother and baby, steps to prevent vertical transmission, including the administration of HB vaccine and HBIG to the baby immediately after birth within a maximum of 12 hours and screening carried out in the family. Nutritional counseling was also conducted to encourage increased consumption of vegetables, fruits, red meat, and fluid intake.

The patient was scheduled to visit a maternity clinic in a type A hospital on August 29, 2024 for further HBV DNA testing. The midwife supported the patient by educating the family about the importance of giving birth in an adequate referral health facility. The patient agreed to undergo delivery at type A hospital for the safety of mother and baby by using BPJS financing.

Monitoring was done through routine ANC every two weeks in the third trimester, including checking blood pressure, weight, DJJ, fetal movement, and signs of complications. After delivery, the baby will receive a complete Hepatitis B immunization, while the mother receives contraceptive counseling to delay pregnancy until her health condition is stable. All interventions are well recorded in the MCH book and medical record to ensure continuous monitoring. Husband, children and other family members living in the same house with the patient are directed to the nearest health center for Hepatitis B screening. This Continuity of Care approach not only aims to maintain the health of the mother and baby in the face of high-risk pregnancies, but also to control the transmission of Hepatitis B[16].

3. Discussion

This case involved a 35-year-old woman who was in her fifth pregnancy with a history of two abortions, two full-term deliveries, and one living child. The patient also had a history of placental retention and test results showed reactive Hepatitis B, making it a high-risk pregnancy. The approach was focused on comprehensive management to maintain maternal and infant health, emphasizing education, psychosocial support, family screening, medical monitoring, and a well-thought-out delivery plan.

Education is the first step to improve the patient and her husband's understanding of Hepatitis B, including how it is transmitted, the risks during pregnancy and childbirth, and preventive measures such as vaccination. Studies show that effective education can improve patient adherence to treatment and reduce anxiety[4]. In addition, psychosocial support is provided to help patients deal with anxiety due to their condition, as good emotional support has been shown to improve maternal well-being and fetal health[5]. Emphasizing that increased knowledge of Hepatitis B among pregnant women is directly related to reduced transmission rates to infants[6]. Open communication between patients and healthcare professionals is also instrumental in building trust and understanding of the treatment plan[13].

Medical monitoring includes HBV DNA testing to assess viral load, which should be done before 28 weeks of gestation. However, in this case, late detection was done at 30 weeks gestation. If the viral load is ≥200,000 IU/mL or 5.3 log10 IU/mL in the absence of cirrhosis, antiviral therapy such as tenofovir at a dose of 1x300 mg is given from 28 weeks gestation until at least delivery and continued for up to 1 (one) month to reduce the risk of vertical transmission[7–10]. There is a risk of Hepatitis flares after antivirals are not given and VHB DNA rebounds. Therefore, it is necessary to re-monitor every 12 weeks for at least 24 weeks postpartum after antivirals are not given. In addition, it is necessary to assess whether the mother needs long-term therapy after delivery[7]. The provision of this therapy can be provided at the health service at the health center level appointed by the local health department.[8–10]

If the delivery is planned to take place in a health facility with the ability to handle Hepatitis B cases, careful preparation for delivery, including choosing the right place, can reduce the risk of complications such as bleeding and infection[8]. With preventive measures such as giving HBIG to the infant less than 24 hours after birth, the infant should also receive Hepatitis B immunization as scheduled to prevent transmission[9]. HBIG immunization after birth is highly effective in preventing transmission of Hepatitis B to infants, and should be done according to established guidelines[3]. In accordance with the Ministry of Health's technical guidelines on Prevention of Mother-to-Child Transmission (PMTCT) of Hepatitis B Virus that can be done: 1. All infants receive the first dose of hepatitis B immunization as soon as possible after birth (HB0) in less than 24 hours. This becomes the performance indicator of the immunization program, by following the reporting and monitoring system; 2. Hepatitis B immunization 1, 2, 3 is given according to the national immunization program schedule; 3. HBIg is given to infants born to HBsAg reactive mothers in less than 24 hours.[7-12]

Education on long-term contraception is also important for Mrs. S after delivery. Considering her age and obstetric history, health care providers should provide information on safe and effective contraceptive options for future family planning. Yeh[10] explained that appropriate use of postpartum contraception can prevent the risk of unwanted pregnancy and further health complications for the mother. [4–6]

Providing education and monitoring of at-risk populations, in this case husbands, children and families living in the same house with the patient, needs to be done Hepatitis B screening. Finally, infants aged 9-12 months born to Hepatitis reactive mothers (at least 1 (one) month after the last dose of vaccine), infants need to be checked for HBsAg and anti HBs titer to ensure transmission of VHB to infants[11]. This examination should be carried out at the health facility at the community health centre level to report the results of the evaluation of hepatitis transmission from mother to baby in the siHepi application.[18]

The Continuity of Care (CoC) approach ensures continuous monitoring and care from pregnancy to postpartum. During pregnancy, patients undergo regular check-ups to evaluate the health condition of the mother and fetus. Education on pregnancy danger signs, such as bleeding or decreased fetal movement, is provided to increase patient awareness. After delivery, mothers are encouraged to exclusively breastfeed with proper immunization protocols as the risk of transmission through breast milk is very low. Education on long-term contraception is also provided to prevent future risky pregnancies.[19-20]

This approach integrates family support, comprehensive education, and holistic medical care to ensure optimal health for both mother and baby. With good collaboration between the patient, family, and health professionals, it is expected that pregnancy and childbirth can proceed safely, while minimizing the risk of complications.

4. Conclusion

The conclusion of this case is that pregnancy with Hepatitis B reactive in high-risk pregnant women requires a comprehensive management approach. Interventions include patient and family education, psychosocial support, regular medical monitoring, and careful planning for delivery at a referral health facility. Education on the risk of vertical transmission and preventive measures, including administration of HBIG and Hepatitis B vaccine to newborns, is essential. A Continuity of Care (CoC) approach ensures that the health of the mother and baby is maintained from pregnancy to post-delivery. Collaboration between patients, families and health workers is the key to success in reducing the risk of complications and improving the safety of mothers and babies.

Compliance with ethical standards

Acknowledgments

In carrying out this Final Project, we had to ask for help and guidance from people we respect. The completion of this case study is a joy for us. We would like to thank the Faculty of Medicine, Airlangga University Surabaya for supporting us and for giving us this assignment which aims to increase knowledge and do practical work.

Disclosure of conflict of interest

The author declares no conflict of interest regarding this research. All authors have contributed to, reviewed, and approved the final manuscript for publication.

Statement of informed consent

The patient has agreed to have his/her case published in the case series and has signed the Consent to Publication letter provided.

Funding

Funding for this research activity comes from the researcher's personal funds

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