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Address for Correspondence:Editorial Room Andalas Obstetrics and Gynecology Journal, 3rd floor of KSM of Obstetrics and Gynecology, RSUP DR. M. Djamil Padang, Jl. Perintis Kemerdekaan Padang, Sumatera Barat 25127**Website:**<http://jurnalobgin.fk.unand.ac.id/index.php/JOE>**RESEARCH****Prevalence of pregnant women with reactive HBsAg in Padang City in 2019**Try Genta Utama¹, Defrin²

Affiliations: 1. Obstetrics and Gynecology Department, Dr. M. Djamil Central General Hospital Padang, West Sumatera, Indonesia; 2. Sub Division of Fetomaternal Medicine, Obstetrics and Gynecology Department, Faculty of Medicine, Andalas University, Dr. M. Djamil Central General Hospital Padang, West Sumatera, Indonesia

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Abstract

Introduction: Hepatitis B is an infectious disease that occurs in the liver caused by the hepatitis B virus (HBV). Transmission vertically 95% occurs in the perinatal period (during delivery) and 5% intra uterine. Hepatitis B infection can be acute to chronic. Chronic infection was defined as hepatitis B surface antigen (HBsAg) persistently in blood or serum for more than 6 months with or without active viral replication and evidence of hepatocellular injury or inflammation. Indonesia as a country with high endemicity of Hepatitis B is currently focusing on preventing mother to child transmission (PPIA) because 95% of hepatitis B transmission is vertical, namely from hepatitis B positive mothers to their babies. The number of pregnant women who have been tested for Hepatitis B using the HBsAg Rapid Diagnostic Test (RDT) in 2018 in Indonesia is still relatively small, which is only 39.95% of the target pregnant women who should be examined. In West Sumatra itself occupies the 30th position out of 34 provinces with the percentage of HBsAg reactive pregnant women as much as 0.97%.

Objective: This study aims to determine the incidence of pregnant women with reactive HBsAg in the city of Padang.

Methods: This research is a descriptive study. The data was taken from the recap of the number of pregnant women who were screened for hepatitis B in all public health centers in the city of Padang during 2019.

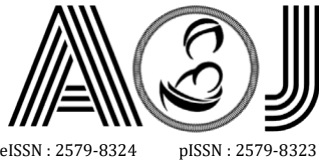
Result : There are 13,174 (72%) pregnant women who have been tested for HBsAg. Found 131 (0.95%) people with reactive HBsAg. The highest cases were found in the Lubuk Kilangan Public Health Center with 14 cases and the lowest in the opposite health center and Ulak Karang health center with 0 cases. The highest case finding occurred in June with 17 cases and the lowest in November with 7 cases.

Conclusion: The prevalence of pregnant women with reactive HBsAg was 0.95% in Padang City in 2019.

Keywords: Hepatitis B, HBsAg, Pregnant Women

INTRODUCTION

Hepatitis B is an infectious disease that occurs in the liver caused by the hepatitis B virus (HBV). This disease is an infectious disease whose virus can be transmitted vertically or horizontally. Transmission vertically 95% occurs in the perinatal period (during delivery) and 5% intra uterine. Horizontal transmission through blood transfusions, contaminated needles, razor burn, tattoos and organ transplants.¹



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Hepatitis B infection can be acute to chronic. Acute infection may be a self-limiting disease with acute inflammation and hepatocellular necrosis. Chronic infection was defined as hepatitis B surface antigen (HBsAg) persistently in blood or serum for more than 6 months with or without active viral replication and evidence of hepatocellular injury or inflammation. The course of the disease becomes chronic, it is often found that 90% of neonates who have been infected acutely are born to HBsAg reactive mothers²

Hepatitis B virus infects about 2 billion people in the world and 240 million of them become sufferers of chronic hepatitis B and cause cirrhosis to liver cancer in later life. Indonesia from the 2013 RISKESDAS results showed the proportion of people with hepatitis B was 7.1%, according to place of residence (6.3% urban and 7.8% rural).³

Indonesia as a country with high endemicity of Hepatitis B is currently focusing on preventing mother to child transmission (PPIA) because 95% of hepatitis B transmission is vertical, namely from hepatitis B positive mothers to their babies. Since 2015 activities for early detection of hepatitis B (DDHB) have been carried out in pregnant women in basic health services (Puskesmas) and their networks.³ The provisions for this examination are contained in the health regulation of the republic of Indonesia number 52 of 2017. Examinations that are required to be carried out on mothers pregnant during antenatal care not only check for hepatitis B but also HIV and syphilis in order to prevent transmission from mother to baby during pregnancy or childbirth.⁴

The number of pregnant women who have been tested for Hepatitis B using the HBsAg Rapid Diagnostic Test (RDT) in 2018 in Indonesia is still relatively small, which is only 39.95% of the target pregnant women who should be examined. The results of the examination found that 1.88% of pregnant women detected reactive HBsAg. The province with the highest percentage of HBsAg reactive pregnant women was East Nusa Tenggara as much as 5.53%, followed by North Maluku 4.52% and Papua 4.48%.¹ West Sumatra itself occupies the 30th position out of 34 provinces with the percentage of HBsAg reactive pregnant women as much as 0.97%.^{3,5}

Currently, there is no data in West Sumatra, especially the city of Padang regarding the distribution of reactive HBsAg cases in pregnant women. For this reason, researchers are interested in examining the distribution of reactive HBsAg cases in pregnant women in the city of Padang through data collected from health centers throughout the city of Padang.⁴

METHODS

This study was conducted by taking data recap of pregnant women who were screened for hepatitis B in all public health centers in the city of Padang during 2019. The sample size in this study used total sampling, i.e. all pregnant women patients who screened for hepatitis B throughout 2019 at the puskesmas were included in the sample. The data collected is secondary data taken from the total number of pregnant women who were tested for hepatitis B along with the results in the form of reactive and non reactive. The



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data collected is monthly data reported by each puskesmas to the Padang City Health Office during 2019.

The analysis used is descriptive analysis which will be described in the form of diagrams, tables and graphs. The diagram is used to describe the proportion of the number of pregnant women who were examined and the number of reactive and non-reactive case findings. The table is used to describe the distribution of puskesmas with the most reactive HBsAg cases. The graph is used to describe the change in the number of cases throughout the year that occurred at the Padang City Health Center.

This research was carried out after obtaining a certificate of permission issued by the Obstetrics and Gynecology section of Dr. M. Djamil Padang and the Padang City Health Office.

RESULTS

The HBsAg Rapid Diagnostic Test (RDT) examination for pregnant women in the city of Padang is targeted at 18,192 people throughout 2019, but only 13,174 pregnant women who carry out the examination. A total of 13,714 pregnant women were examined using the HBsAg Rapid Diagnostic Test (RDT) conducted at 23 health centers in the city of Padang during 2019, found 131 pregnant women with reactive HBsAg results.

The highest cases were found at the Lubuk Kilangan Health Center with 14 cases and 0 cases were found in two health centers, namely the Puskesmas across the field and the Puskesmas Ulak Karang. Throughout 2019, the most cases were found in June with 17 cases and the lowest in November with 7 cases

Hepatitis B screening for pregnant women in the city of Padang has been carried out on 72% of pregnant women during antenatal care from 18,192 target pregnant women who should be examined. This indicates that the screening carried out in the city of Padang has been going well, because the average hepatitis B screening examination in Indonesia was only 39.95% in 2018.³

The results of the screening examination found 0.95% of pregnant women with reactive HBsAg. This figure is slightly lower than the incidence rate in West Sumatra, which was 0.97% in 2018.³ This is in line with research conducted in Malang in 2017, which found 1% of pregnant women with reactive HBsAg from the screening carried out.⁶ In the United States the prevalence Pregnant women with reactive HBsAg are estimated to be around 0.7-0.9%, with the possibility that >25,000 babies will be born at risk for chronic hepatitis B.⁷

DISCUSSIONS

Research conducted in Middle Eastern countries, the lowest prevalence of pregnant women with reactive HBsAg was found in Iran, namely 1.35% and the highest in Sudan as much as 5.58%.⁸ In China in 2016 the prevalence of pregnant women with reactive HBsAg



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was 3,1%.⁹ In neighboring Indonesia, Laos, the same study from 2008-2014 found the prevalence of pregnant women with reactive HBsAg was 5.44% (95 CI:5.1-5.8).^{10,20}

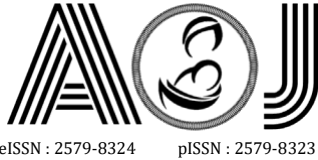
The prevalence of pregnant women with reactive HBsAg in other countries is found to be higher than in Indonesia. This could be due to the fact that case finding in Indonesia is still very low, which is only about 39.95% of pregnant women who are screened.^{3,6}

A study conducted by Muljono in 2017 estimated that with an average pregnancy rate of 5,000,000/year, it is estimated that 150,000 pregnant women in Indonesia have the potential to transmit hepatitis B to their babies and 95% of these babies will suffer from chronic hepatitis B and become infectious throughout their lives.^{1,14}

Identification of pregnant women with chronic hepatitis B is an early screening that is very important to reduce the risk of newborns being infected with hepatitis B. 7 One third of cases of chronic hepatitis B in the world are transmitted from mothers with reactive HBsAg to their children. 12 Administration of hepatitis B vaccine and HBV immunoglobulin within 12 hours in every newborn to a mother with reactive HBsAg is the recommended prevention to reduce the incidence of chronic hepatitis B in these infants later.^{13,21}

Screening for hepatitis B should be performed on all pregnant women during the first trimester of pregnancy. If reactive HBsAg is found, it is recommended to have a viral load test at 28 weeks of gestation, but if non-reactive HBsAg is found, it is recommended that mothers who have a high risk of contracting hepatitis B get vaccinated as well as their babies at birth.^{13,17} Anti-retroviral administration to pregnant women with A positive HBsAg needs to be followed by a viral load test first.¹² If a mother who has HBV DNA >200,000 IU/mL is recommended to be given antiretroviral, if it is not enough then the mother does not get antiretroviral but the baby born later should receive hepatitis B vaccine and immunoprophylaxis at the time of delivery. birth.^{13,14} Consideration for termination of pregnancy by cesarean section for patients with high viral loads without receiving antiviral therapy to prevent vertical transmission of the virus.^{12,18}

Research conducted by Zhao in Xiamen China from 2011-2018 concluded that the choice of termination of pregnancy by cesarean section was preferred by clinicians to prevent vertical transmission, although active and passive immunization proved effective in preventing transmission.^{15,19} However, a study in Beijing from 1409 Babies born to mothers with HBsAg positive then receive hepatitis B immunoprophylaxis at birth, reported rates of hepatitis B transmission that occur vertically were found to be 1.4% in pregnancy termination by planned cesarean section, 3.4% in vaginal termination and 4, 2% for immediate cesarean section (P<0.5).¹³ At RSUP DR. M. Djamil Padang did not occur vertically transmission from newborns with positive HBsAg either vaginal termination or cesarean section due to vaccination with Hepatitis and immunoglobulin within <12 hours after the baby was born.¹⁶



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The prevalence of pregnant women with reactive HBsAg in the city of Padang is 0.95%, this is in line with the incidence rate in West Sumatra as much as 0.97%. The importance of screening for reactive HBsAg in pregnant women because one third of the number of hepatitis B cases worldwide is due to mother-to-child transmission. This transmission can be prevented by administering hepatitis B vaccine and HBV immunoglobulin to newborns from HBsAg reactive mothers.

REFERENCES

1. Infodatin. Situasi dan Analisis Hepatitis. Jakarta : Kementerian Kesehatan Republik Indonesia; 2014.
2. WHO. Hepatitis B ; 2018.
Available at: <https://www.who.int/news/room/factsheets/detail/hepatitis-b>
3. Kementerian Kesehatan Republik Indonesia. Profil Kesehatan Indonesia. Jakarta: Kementerian Kesehatan Republik Indonesia; 2018
4. Peraturan Menteri Kesehatan Republik Indonesia Nomor 52 Tahun 2017 tentang eliminasi penularan Human Immunodeficiency Virus, Sifilis, dan Hepatitis B dari ibu ke Anak.
5. Dinkes Provinsi Sumbar. Profil Kesehatan Provinsi Sumatera Barat 2016. Padang; Dinas Kesehatan Provinsi Sumatera Barat; 2018
6. Mustika S, Hasanah D. Prevalensi Infeksi Hepatitis B pada ibu Hamil di Malang. Jurnal Kedokteran Brawijaya. 2017; Vol 30 (1): 76-80.
7. Society for Maternal-Fetal Medicine (SMFM), Dionne-Odom J, Tita AT, Silverman NS. #38: Hepatitis B in pregnancy screening, treatment, and prevention of vertical transmission. Am J Obstet Gynecol. 2016; 214(1):6-14.
8. Malekifar P, Babanejad M, Izadi N, Alavian SY. The Frequency of HbsAg in Pregnant Woman from Eastern Mediterranean and Middle Eastern Countries: A systematic Review and Meta-Analysis. Hepat Mon. 2018; 18(9).
9. Sheng Q, Wang S, Wu Y, et al. Hepatitis B virus serosurvey and awareness of mother-to-child transmission among pregnant woman in Shenyang, China. Medicine. 2018; 97:22.
10. Choisy M, Keomalaphet S, Xaydalasouk K, et al. Prevalence of Hepatitis V virus infection among pregnant women attending Antenatal Clinics in Vientiane, Laos, 2008-2014. Hindawi hepatitis research and treatment. 2017.
11. Muljono DH, Epidemiology of Hepatitis B and C in Republic of Indonesia. Euroasian Journal of Hepato-gastroenterology. 2017; 7(1): 55-59.
12. Pawlowska M, Pniewska A, Pilarczyk M, Kozielwicz D, Domagalski K. Prophylaxis of vertical HBV infection. Expert Opin Drug Saf. 2016;15(10):1361-1368.



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13. Tran TT. Hepatitis B in pregnancy. *Clin Infect Dis*. 2016; 62(Suppl. 4): S314-S317.
14. Terrault NA et al. Update on Prevention, Diagnosis, and Treatment and of Chronic Hepatitis B: AASLD 2018 Hepatitis B Guidance. *Hepatology*. 2018; 67(4)
15. Zhao Y, Chen YL, Song HQ, Huang PY, Wang LY, Liu W, Huang BK, Lv FP, Huang C, Yan B, Li XJ. Effects of maternal hepatitis B surface antigen positive status on the pregnancy outcomes: A retrospective study in Xiamen, China, 2011-2018. *PLoS One*. 2020 Mar 10;15(3):e0229732.
16. Pradipta R, Yanti RS. Prevalensi Kejadian Infeksi Virus HbsAg pada Bayi Baru Lahir dari Ibu dengan HbsAg positif. *Indonesian Journal of Obstetrics & Gynecology Science*. 2019; 2(2)Düzgüner S, Zengin T, Taşçı T, Turan T, Boran N, Tulunay G, Köse M. Long-term survival after total pelvic exenteration in a patient with recurrent cervical carcinoma: A case report. 2013, 186-188
17. Adesina O, Oladokun A, Akinyemi O, Adedokun B, Awolude O, Odaibo G, et al. Human immuno-deficiency virus and hepatitis B virus coinfection in pregnancy at the University College Hospital, Ibadan. *Afr J Med Med Sci* 2010;39:305–10. Ahizechukwu CE, Uzoamaka AE, Charles IO, Ifeanyichukwu UE, Chukwuanugo O. Prevalence, correlates and pattern of hepatitis B surface antigen in a low resource setting. *Virol J* 2011;8:12.
18. Buseri FI, Seiyaboh E, Jeremiah ZA. Surveying infections among pregnant women in the Niger Delta, Nigeria. *J Glob Infect Dis* 2010;2:203–11.
19. Chasela P, Wall E, Teshale M. Prevalence of HBV and occult HBV infections among pregnant women co-infected with HIV-1 in Lilongwe, Malawi: the Breast feeding, Antiretroviral and Nutrition (BAN) study. *J Hepatol* 2013;10–6.
20. Spearman CW, Afihene M, Ally R, Apica B, Awuku Y, Cunha L, et al. Hepatitis B in sub-Saharan Africa: strategies to achieve the 2030 elimination targets. *Lancet Gastroenterol Hepatol* 2017;2:900–9.
21. World Health Organization. WHO Global health sector strategy on viral hepatitis 2016–2021: towards ending viral hepatitis. Geneva: WHO; 2016 Available at: apps.who.int/iris/bitstream/10665/246177/1/WHO-HIV-2016.06-eng.pdf. [Last accessed 25 February 2017].