

PREVENTION AND MANAGEMENT OF HYPERTENSION IN PREGNANCY WITH COVID-19

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Abstract

Hypertension is a non-communicable disease that is one of the major challenges worldwide with 839 million cases of hypertension. The prevalence of the maternal mortality rate (MMR) in Indonesia due to hypertension in pregnancy has increased (nearly 30%). This study was a descriptive case study. This study was conducted at RSAL Dr. Soedibjo Sardadi Jayapura in August 2020 in participant Mrs. I, 22 years old, 39 weeks pregnant, and diagnosed with gestational hypertension and reactive SARS CoV-2igG antibody. Hypertension in pregnancy can cause complications in pregnancy, including placental abruption, disseminated intravascular coagulation, cerebral hemorrhage, renal failure, acute renal failure, IUGR, prematurity, and fetal death in utero. Hypertension is one of the risk factors for COVID-19. Eating a balanced diet (limiting sugar, and salt, consuming fruits, vegetables, nuts, seeds, foods with low saturated fat) and eating 5 servings of fruits and vegetables per day can prevent hypertension in pregnancy. Breaking the chain of transmission with isolation, early detection, and carrying out basic protection such as maintaining hygiene, washing hands, disinfection can also prevent the spread of COVID-19.

Keywords: *hypertension; pregnancy; covid-19*

1. Introduction

Hypertension is a non-communicable disease that is still widely spread in the world. According to WHO (World Health Organization) data (2012), there were 839 million cases of hypertension in 2012 and it was estimated that it will increase around 1.15 billion cases or 29% of the world's total population in 2025. In the midst of the Covid-19 pandemic, patients suffering from hypertension need special treatment (Sari et al., 2016). Globally, the five main causes of maternal death are bleeding (30.1%), hypertension (26.9%), infection (5.6%), prolonged labor (1.8%), abortion (1.6%) and other causes (34.5%). While the cause of the Maternal Mortality Rate (MMR) in Indonesia due to hypertension in pregnancy, the proportion has been increasing, which is almost 30% (Situmorang & Sapitri, 2018).

According to Baseline Health Research data in 2018, the prevalence of hypertension in people aged ≥ 18 years was 34.1% while in Papua was 22.2%. The estimated number of cases of hypertension in Indonesia was 63,309,620 people,

while the death rate in Indonesia due to hypertension was 427,218 deaths (Risikesdas, 2018).

Hypertension is an increase in systolic by 30 mmHg or diastolic by 15 mmHg above the baseline value of blood pressure. The diagnosis of hypertension that is triggered by pregnancy usually easy to detect through blood pressure measurement (140/90 mmHg or more) (Kartikasari & Mauliyah, 2018).

Primiparous pregnant women often get stressed related to childbirth. Emotional stress that occurs in primiparous women causes an increase in the release of corticotropic-releasing hormone (CRH) in the hypothalamus, which lead to an increase of cortisol. The effect of cortisol is to prepare the body to respond to all stressors by increasing sympathetic responses, including responses aimed at increasing cardiac output and maintaining blood pressure, hence, stress can trigger high blood pressure (Radjamuda & Montolalu, 2014).

Risk factors that may trigger hypertension in pregnancy are family history, kidney diseases and pre-pregnancy hypertension, obesity, history of preeclampsia in previous pregnancies, extreme maternal age, hydatidiform mole, multiple pregnancies, diabetes mellitus, hydrops fetalis, and macrosomia (Amalia, 2015).

Patients with hypertension are more easily infected with COVID-19. Risk factors for COVID-19 infection are hypertension and diabetes mellitus, male, and active smokers (Susilo et al., 2020).

Gestational hypertension can harm both mothers and fetuses, which can lead to complications in pregnancy, including placental abruption, disseminated intravascular coagulation, cerebral hemorrhage, kidney failure, acute renal failure, IUGR, prematurity, and fetal death in utero (Kartikasari & Mauliyah, 2018).

There are 2 managements of hypertensive pregnant women; pharmacological and non pharmacological approaches. Pharmacological approach used antihypertensive drugs such as α -Methyldopa and Labetalol for patients with moderate and severe hypertension. On the other hand, non-pharmacological approach used potassium and sodium diite (salt) to treat mild hypertension (Kartikasari & Mauliyah, 2018).

2. Methods

The design of this study was descriptive, that aimed to explain a situation or phenomenon to find new ideas (Nursalam, 2013). The type of descriptive research used was a case study, which examined a problem through a case study consisting of a single unit. A participant examined in this case study was a pregnant woman with gestational hypertension and infected with the COVID-19 virus. This research was conducted at RSAL Dr. Soedibjo Sardadi Jayapura in August 2020. Data collection methods in this case study were observation and physical examination, and documentation study

3. Results and Discussion

Case

Mrs. I, aged 22 years, G1P0A0, 39 weeks pregnant, came to RSAL dr. Soedibjo Sardadi Jayapura at 07.00 WIT suffered from backward translucent abdominal pain and mucus and blood discharge since last night.

Based on the anamnesis of the patient, the pain was intermittent and more frequent and no discharges of amniotic fluid from the birth canal.

The patient had her first menstruation at the age of 12 years with a cycle of 28 days, for 6-7 days, 3-4 times changing her pads, with the first day of her last menstruation on November 14, 2019 and estimated delivery on August 15, 2020. The patient was not married as she and her partner had different beliefs.

Based on the physical examination, the patient's condition was good, BP 140/80 mmHg, pulse 80 x / minutes, Temperature 36.5oC, RR 22 x / minutes, palpation on Leopold I: TFU 3 fingers below px, palpable of large part, round soft part is not bouncy, Leopold II: the right side is small parts of the fetus and the left is a large part of fetus, Leopold III: one feels a large part of the round hard bouncy, Leopold IV: divergent and the head was lowered 2/5, FHR + 130x / m, 8 cm opening, soft and thin portion, hodge III decrease, contraction +

The laboratory examination results were Hb: 11 g / dl, leukocytes: 9,600 / l, erythrocytes: 3,800,000 / l, platelets: 241,000 / ul and hematocrit: 29%. Serum bilirubin: Serum Glutamic Oxaloacetic Transaminase (SGOT) 47 u / L, Serum Glutamic Piruvic Transaminase (SGPT) 37 μ l / L and the urine protein test was negative. SARS CoV-2igG antibody was reactive.

Non-medical management that was implemented including; 1) observing of the mother's vital signs, fetal heart rate, and contraction; and the progress of childbirth 2) wearing a mask, 3) teaching the mother relaxation techniques, taking a deep breath during her time, providing mental support to the mother during the labor 4) rapid test is mandatory for all pregnant women before childbirth, 5) during delivery, there must be a special camber or triage to deliver babies.

Medical management for the patient was a collaboration with doctors to provide induction of labor with oxytocin and Intravenous Fluid Drip Ringer Lactate (IVFD RL) drips oxytocin 5iu, and no prescription for drugs of gestational hypertension.

Discussion

Based on the data obtained in this study, Mrs. I, 22 years old, G1P0A0, 39 weeks pregnant, experienced abdominal pain and mucus and blood discharge. The patient felt intermittently pain that gradually increased and there was no discharge of amniotic fluid from the birth canal. In this case, the patient showed the signs of labor with blood pressure of 140/80 mmHg which indicated hypertension during pregnancy. The diagnosis of hypertension in pregnancy can be confirmed if the blood pressure is 140/90 mmHg or more (Kartikasari & Mauliyah, 2018).

This patient was also diagnosed positive for COVID-19, although without symptoms, but from the laboratory results, the SARS CoV-2igG Reactif antibody rapid test was obtained, a swab test was positive. Patients infected with COVID-19 can show symptoms or no symptoms. Mild symptoms in infected patients with COVID-19 includes patients with acute infection of the upper respiratory tract without complications, fever, fatigue, cough (with or without sputum), anorexia, malaise, sore throat, nasal congestion, or headache. In these conditions the patient does not need oxygen therapy (Susilo et al., 2020).

Pregnant women with hypertension can endanger both the mother and the fetus, which can lead to complications in pregnancy, including placental abruption, disseminated intravascular coagulation, cerebral hemorrhage, kidney failure, acute renal failure, IUGR, prematurity, and fetal death in utero (Kartikasari & Mauliyah, 2018). COVID-19 infection can also worsen the condition of hypertensive patients, especially in pregnant women with hypertension (Alfhad et al., 2020).

Patients need be treated immediately as patients with comorbid such as hypertension are more often recorded among COVID-19 patients who have serious illnesses, are admitted to the intensive care unit, require ventilation, or die than patients with moderate disease (Alfhad et al., 2020).

Based on the diagnosis, Mrs. I, 22 years old ,G1P0A0, pregnant with aterm, single intrauterine, in the first active phase with gestational hypertension and reactive SARS CoV-2igG antibody. Then the management is implemented in the patient, includes 1) observing of the mother's vital signs, fetal heart rate, and contraction; and labor progress; 2) wearing a mask; 3) teaching the mother relaxation

techniques, taking deep breaths during her time, providing mental support to the mother to reduce anxiety during labor; 4) a mandatory rapid test for all pregnant women before delivery; 5) during delivery, there must be a special bucket or triage to help delivering babies. In addition, a collaboration with doctors was also needed regarding labor induction with oxytocin and Intravenous Fluid Drip Ringer Lactate (IVFD RL) drips oxitocin 5iu, no drugs for gestational hypertension were given as the patient was in the gestational age of 39 weeks (aterm) and in the labor phase.

The management of hypertension in pregnancy is pharmacological approach and non-pharmacological approach. Pharmacological therapy in hypertension during pregnancy is the administration of anti-hypertensive drugs. The management of gestational hypertension also aims to reduce maternal morbidity and mortality and reduce prematurity rates. It is usually given to pregnant women with preeclampsia at gestational age less than 34 weeks or pregnant women with gestational hypertension at gestational age less than 34 weeks that are planned for delivery within the next 7 days (Amalia, 2015).

Guidelines for treating COVID-19 patients are based on the degree of disease severity, if patients are asymptomatic, mild symptoms, aged <70 years without risk factors, clinical observation and supportive therapy are used. If the patients are Mild symptoms,> 70 years old with risk factors and symptoms of fever, cough, shortness of breath, and X-ray showed pneumonia: LPV / r 200 mg / 50 mg, 2 x 2 tablets per day; or Darunavir / ritonavir (DRV / r) 800 mg / 100 mg, 1 x 1 tablet per day; or Darunavir / cobicistat 800 mg / 150 mg, 1 x 1 tablet per day; AND chloroquine phosphate 2 x 500 mg / day or hydroxychloroquine (HCQ) 2 x 200 mg / day are used. Therapy is given for 5-20 days based on clinical changes (Susilo et al., 2020). The treatment of COVID-19 in the patient of this case study is clinical observation and supportive therapy as the patient does not show symptoms of COVID-19 even though she has risk factors of COVID-19 (hypertension). Additionally, the implementation of the COVID health protocol in providing treatment need to be continued.

Hypertension can be prevented by controlling the risk of hypertension in pregnant women through dietary modifications which have been shown to reduce blood pressure in hypertensive patients. This diet includes eating balanced nutrition, limiting sugar, salt, consuming fruits, vegetables, nuts, seeds, low saturated fat foods and it is recommended to eat 5 servings of fruits and vegetables per day because the potassium content can lower blood pressure (Sari et al., 2016).

Breaking the chain of transmission with isolation, early detection, and carrying out basic protection such as maintaining hygiene, washing hands, disinfection can also prevent the spread of COVID-19.

4. Conclusion and Recommendation

Hypertension in pregnancy is a serious problem for the mother and the fetus. Hypertension in pregnancy can cause complications in pregnancy, including placental abruption, disseminated intravascular coagulation, cerebral hemorrhage, renal failure, acute renal failure, IUGR, prematurity, and fetal death in utero. Hypertension is one of the risk factors for COVID-19.

Hypertension can be prevented by eating balanced nutrition, limiting sugar, salt, consuming fruits, vegetables, nuts, seeds, low saturated fat foods and it is recommended to eat 5 servings of fruits and vegetables per day because the potassium content can lower blood pressure. Breaking the chain of transmission with isolation, early detection, and carrying out basic protection such as maintaining hygiene, washing hands, disinfection can also prevent the spread of COVID-19.

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