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Risk factors for gestational hypertension at RSIA Sitti Khadijah 1 year 2019-2022

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ABSTRACT
Gestational hypertension (also called transient hypertension) is hypertension that occurs in pregnancy without proteinuria. This research was conducted at RSIA Khadijah Makassar 1 year 2019-2022, using a retrospective descriptive method, using total quota sampling that met the inclusion criteria. The number of samples obtained was 32 samples with the characteristics of gestational hypertension occurring most frequently at the age of 20-35 years, namely 26 (81.25%), with grand multigravida, namely 13 (40.6%), BMI >25 kg/m2 27 (84.4%), and in patients without a history of hypertension, namely 17 (53.12%). Based on statistical tests, it was found that there is a relationship between gravida and the incidence of gestational hypertension with a p-value of 0.083, which is smaller than 0.10, meaning that pregnant women with primigravida and grand multigravida have a 9.3 times higher risk of developing gestational hypertension than pregnant women. with multigravida, while age, BMI, and history of hypertension had no significant relationship to the incidence of gestational hypertension at RSIA Sitti Khadijah 1.

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INTRODUCTION

Hypertension is one of the three main causes of mortality and morbidity in pregnant women, hypertension in pregnancy accounts for 5-15% of pregnancy complications. Maternal mortality and morbidity rates related to hypertension are still very high in Indonesia. Apart from the lack of a clear explanation, this is because the responsibility of non-medical personnel is still in providing services during childbirth and the referral system is still far from ideal. It is important for all medical personnel, both at the center and in the regions, to thoroughly understand how to treat hypertension in pregnancy, because this condition can attack pregnant women at any gestational age. The cardiovascular disease known as hypertension impacts a large proportion of the global population. Nearly one million people suffer from high blood pressure, and two-thirds of that number live in underdeveloped countries. Hypertension accounts for fourteen percent of maternal deaths during pregnancy, according to statistics compiled by the World Health Organization (WHO). It is estimated that the number of maternal deaths in 2013 was around 210 (Sarwono, 2016).

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On the African continent, more than 410 mothers die during childbirth, the highest in the world, compared to less than 100 mothers in Asia (especially Southeast Asia). Therefore, it is generally known that hypertension during pregnancy has a significant impact on reducing maternal mortality. ISSHP classifies hypertension in pregnancy into four different forms: preeclampsia-eclampsia, gestational hypertension, chronic hypertension, and chronic hypertensive preeclampsia (Basri, 2018).

Gestational hypertension, also known as transient hypertension, refers to the condition of increased blood pressure that occurs during pregnancy without proteinuria, and blood pressure returns to normal after 3 months postpartum. In addition, it can also include pregnancies with symptoms of preeclampsia, but without signs of proteinuria. Considering the high maternal mortality rate and prevalence of hypertension during pregnancy in Indonesia, this study is very important to identify factors that influence Gestational Hypertension (HDP) in this country. Through this research, it should be possible to increase awareness of pregnant women to undergo routine antenatal care checks at health facilities (Sari, 2016).

METHOD

This research is a study that uses a retrospective cohort method, to gain knowledge of the risk factors for gestational hypertension in pregnant women at the Sitti Khadijah Mother and Child Hospital 1 year 2019-2022 with gravidity, age, nutritional status and history of hypertension through the use of medical records as data. study.

RESULTS AND DISCUSSION

This study was carried out at the Sitti Khadijah 1 Makassar Mother and Child Hospital. This research uses a retrospective descriptive method that looks at the patient's medical records. This research involved 32 medical records of patients from RSIA Sitti Khadijah with a diagnosis of gestational hypertension from 2019-2022.

Table 1. Characteristics of Maternal Age, Gravid, Nutritional Status, History of Hypertension at RSIA Khadijah 1

Variable	N = 32	Percentage
Mother's Age		
20-35 Years	26	81.25%
> 35 Years	6	18.75%
Gravid		
At risk (Primigravida, Grand multigravida)	23	71.8%
No risk (Multigravida)	9	28.1%
IMT		
<25	5	15.6%
≥25	27	84.4%
Pregnancy HT History		

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There's a history	15	46.87 %
No history	17	53.12 %
Total	32	100%

Table 2. Relationship between risk factors and gestational hypertension using partial test

Variabel	B	p-Value	Exp(B)	90 % C.I.for EXP(B)	
				Lower	Upper
Age Category	1.029	0.435	2.798	0.321	24.392
Gravid Category	2.233	0.083	9.329	1.120	77.735
BMI category	-0.156	0.909	0.856	0.091	8.035
History of Hypertension	-1.013	0.253	0.363	0.084	1.562
Constant	-1.910	0.115	0.148		

Discussion

Gestational hypertension from 32 samples was most common in those aged 20-35 years, amounting to 81.25%, while those aged >35 years amounted to 18.75%. Based on statistical tests, it was found that the p-value was 0.453, which was higher than 0.10. Therefore, there is no significant correlation between maternal age and the incidence of gestational hypertension. Even though age is considered to have a risk, in this study many mothers at risk did not experience gestational hypertension, which could be due to the lack of samples in this study and most mothers who experienced gestational hypertension at the age of 20-35 years were primigravid mothers.

This is in line with the study carried out by Ryska, et al (2021), the results of research conducted on 197 patients found that 165 patients aged 20-35 years found that based on statistical tests there was no correlation between maternal age and the presence of hypertension in pregnancy at the Air Putih Samarinda Community Health Center. in 2019. This is different from the study carried out by Yoan Putri (2022), in the results of a study of 70 samples with 38 people at risk and 32 people who were not at risk. The results of statistical tests using chi square at $\alpha = 0.05$ were obtained p value = 0.001 < 0.05, which means there is a significant relationship between age and the presence of gestational hypertension, at RSIA Masyita Makassar City in 2022 (Susanti, 2020).

Although hypertension is generally more common in people over 35 years of age, some people manage to avoid it altogether. The reason is, pregnant women tend to be in excellent health condition, avoid stress, achieve balance without risk, have no history of hypertension, and always have regular ANC checks. Hypertension attacks those aged between 20 and 35 years, who do not have a high risk of developing this disease but have their own worries, on average, they are waiting for the birth of their first child (Febyan, 2018).

From the results of the univariate analysis obtained from 32 gestational hypertension patients, the highest number of mothers who were at risk of primigravida and grand multigravida were 23 (71.8%), compared with 9 people who were multigravida (28.1%). Based on statistical tests, it was found that the p-value was 0.083, which was lower than

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0.10. The Odd Ratio value shows a value of 9.329. This means that a pregnant mother in the risk group (primigravida and grand multigravida) has a 9.3 times greater risk of developing gestational hypertension than a pregnant woman with multigravida.

Primigravidas often experience stress when facing childbirth. When a primigravida experiences emotional stress, the hypothalamus releases more corticotropic-releasing hormone (CRH), which in turn increases cortisol levels. Cortisol increases sympathetic reactions, including those that attempt to maintain blood pressure and increase cardiac output, so that the body is ready to respond to any stressor. According to Sukaesih (2012), the lowest risk of maternal death occurs between the ages of 2 and 3 years. Because the uterus enlarges with each pregnancy, having more than three children increases the chances of HDK. The uterus weakens with each successive pregnancy, which can cause complications during the entire pregnancy and postpartum period (Philip, 2018).

This finding is consistent with the findings of Putri Diah Pemiliana et al. (2018). In 2018 at the Setabu Community Health Center, North Kalimantan Province, a p-value of 0.024 < sig α (0.05) was obtained from the chi-square statistical test, showing that there was a significant relationship between parity of pregnant women and hypertension during pregnancy. The results of this study are not in line with the results of a study carried out by Wisnu (2021) at the Inpatient Installation of Dr. RSUD. Moewardi. Of the 76 samples, patients with grand multigravida were 56 samples (73.7%), more than patients with grand multigravida 2 samples (26.3%). It was stated in the research results that the gravida status that experienced hypertension was the multigravida group. It is suspected that this could be due to other factors, such as the patient's history of hypertension and a history of severe preeclampsia in the family, which is why the number of patients in that group has a larger percentage when compared with the primigravida group (Ayu, 2023).

In the research that has been carried out, it was found that gestational hypertension patients mostly suffered from patients with a BMI ≥25 Kg/BW2, namely 27 people (84.4%), while a BMI <25 Kg/BW2 was 5 people (15.6%), with a statistical test of the p-value 0.909 is greater than 0.10. Thus, there is no significant correlation between BMI or also known as BMI and the incidence of gestational hypertension in this study. Although being overweight or obese in pregnancy is associated with increased pregnancy complications, one of which is hypertension in pregnancy. In this study, it was found that there was no relationship between BMI and the incidence of gestational hypertension, this could be due to the high awareness of pregnant women regarding being overweight, so that mothers undergo regular ANC visits at health facilities, and have a low-salt diet (Diah, 2018).

The results are in line with a study conducted by Mutmainnah (2021), 2 respondents (25%) who were obese experienced gestational hypertension and 6 respondents (75%) who did not experience hypertension. Meanwhile, 4 respondents (9.3%) who were not obese experienced gestational hypertension and 35 respondents (90.6%) did not experience gestational hypertension. The results of the Chi-square statistical test analysis can be concluded that there is no relationship between obesity and the incidence of gestational hypertension in the Mare health center working area. This is due to the high

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awareness of respondents regarding the impact of being overweight, so mothers are determined to adopt a healthy lifestyle by controlling food and drink, a salt diet and doing light physical activity so that their weight gain can be controlled. The findings of this study differ from the findings of Shaba et al. (2015), who found a correlation between maternal BMI and hypertension in pregnancy (p=0.001), and also reported that pregnant women whose BMI increased by 5–7 kg/m2 had a 1.17 times higher risk of developing HDK. The findings of this study support the idea that there is a correlation between dyslipidemia and high body mass index (BMI), which in turn increases blood triglyceride and LDL (Low Density Lipoprotein) levels while reducing VLDL (Very Low Density Lipoprotein) levels. The underlying idea that causes hypertension in pregnancy is that this scenario will lead to oxidative stress and damage to the endothelial system. According to research conducted between October and December 2018 at Bhayangkara Hospital Denpasar, Bali, by Febyan et al. Hypertension during pregnancy is associated with a higher body mass index, according to research. Meanwhile, the risk of hypertension in pregnancy is 2.602% in women with a body mass index (BMI) higher than 26 (Kundarto, 2021).

Hypertension in a woman's first pregnancy is associated with an increased risk of gestational hypertension in subsequent pregnancies. Hypertension is more likely to occur in the second pregnancy for women with a history of this disease, especially if the two pregnancies are far apart, according to the incidence of hypertension. Compared to pregnant women without a history of hypertension, pregnant women who have a history of hypertension have four times the risk of complications (Yoan, 2022).

In the research that has been carried out in Table 4.5, univariate analysis can be seen based on history of hypertension. Of the 32 samples obtained, 17 people (53.12%) had no history of hypertension, while 15 people had a history of hypertension (46.87%). Based on statistical tests, it was found that the p-value was 0.253 which was greater than 0.10. Thus, there was no significant relationship between a history of hypertension and gestational hypertension in this study. The history of hypertension referred to in this study is a history of HDK and/or a history of hypertension in the family. Although pregnant women with a history of hypertension are considered to be at risk, in this study many mothers who did not have a history of hypertension experienced gestational hypertension, this can be caused by several external factors such as a healthy lifestyle and regular antenatal care checks.

In other research conducted by Rofiqo (2018). Found in pregnant women with a family history of hypertension, the most common type of hypertension is gestational hypertension (62.5%), followed by chronic hypertension (37.5%) and preeclampsia (0%). On the other hand, in pregnant women who had no history of hypertension in their family, the most common type of hypertension was gestational hypertension (65.6%), with chronic hypertension and superimposed preeclampsia each accounting for 17.2%. A statistical test using chi-square produced a p-value of 0.23 ($p>\alpha=0.05$), thus showing that there is no correlation between a history of hypertension in the family and the prevalence of hypertension in pregnancy. According to this, women with a history of hypertension do not necessarily suffer from hypertension during pregnancy. Educating all pregnant women,

especially those with a history of hypertension, to pay more attention to lifestyle choices and comply with prenatal check-ups by health care providers will help minimize hypertension during pregnancy (Mutmainah, 2021).

This is different from the study conducted by Yoan Putri (2022), the results of the study showed that 19 participants (63.3%) had a history of hypertension and suffered from hypertension during pregnancy, while 11 participants (36.7%) of pregnant women did not have a history of hypertension which also suffering from hypertension. According to Behrens (2017) who conducted research at RSIA Masyita, there is a significant correlation between the history of maternal hypertension and the incidence of gestational hypertension. This conclusion was reached after a statistical test using chi-square at α = 0.05 resulting in a p value = 0.001 < 0.05. Gestational hypertension is two to six times more common in subsequent pregnancies in pregnant women who have a history of hypertension in the first pregnancy (Chouda, 2023).

CONCLUSIONS

Based on the results of the study and discussion regarding the characteristics of gestational hypertension patients based on age, parity, history of hypertension and education of 32 respondents with a diagnosis of gestational hypertension, it can be concluded that: The characteristics of gestational hypertension occur most frequently at the age of 20-35 years, namely 26 (81.25%), with grand multigravida, namely 13 (40.6%), BMI >25 kg/m2 27 (84.4%), and in patients without a history of hypertension, namely 17 (53.12%). There is a relationship between gravida and the incidence of gestational hypertension at RSIA Khadijah in 2019-2022, based on statistical tests it was found that pregnant women in risk groups (primigravida and grand multigravida) were 9.3 times more likely to experience gestational hypertension than pregnant women with multigravida. Based on statistical tests, the risk factors of age, body mass index, and previous history of hypertension have an insignificant relationship with the incidence of gestational hypertension, this can be caused by the lack of samples in this study.

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