

Research Report

Characteristics of Patients with Hypertension in Pregnancy at Sanglah Hospital

Karakteristik Pasien Hipertensi dalam Kehamilan di Rumah Sakit Umum Pusat Sanglah Denpasar

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Abstract

Objective: To report the profile of patients with Hypertension in Pregnancy (HIP) at Sanglah Hospital Denpasar from 2009 to 2010.

Method: A retrospective descriptive study from all HIP patients at Sanglah Hospital Denpasar, Bali during January 2009 to December 2010.

Result: The prevalence of HIP at Sanglah Hospital was 9.32%, which consisted of 1.82% gestational hypertension, 0.19% chronic hypertension, 1.36% mild preeclampsia, 4.70% severe preeclampsia, 0.43% superimposed preeclampsia, and 0.82% eclampsia. From all of HIP cases, we found that the majority were nulliparous (47.23%), primipaternal (53.1%), and had hypertension at term (51.9%). Most of the cases were found at maternal age > 35 years (14.62%), followed by age < 20 years (13.47%). Most of them also had Ante Natal Care (ANC) frequency ≥ 4 times (69.09%), and had their ANC done by a midwife (52.76%) and followed with an obstetrician (40.81%). The majority of the cases were referral cases (62.39%) mostly by midwives (22.45%). From all of the cases, we found that total preterm labor was 35.14%, perinatal mortality was 9.32% and maternal mortality was 1.16%.

Conclusion: The prevalence of HIP at Sanglah Hospital was higher than previous years. Most of them had already had ANC done by health care providers, who were mostly midwives and obstetricians. Therefore, the quality of ANC seems to need an improvement by having an earlier referral system, so cases can be treated earlier.

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Keywords: hypertension in pregnancy, preeclampsia and eclampsia, descriptive

Abstrak

Tujuan: Mengetahui profil penderita hipertensi dalam kehamilan (HDK) di RSUP Sanglah Denpasar dalam periode tahun 2009 - 2010.

Metode: Penelitian deskriptif retrospektif penderita HDK di RSUP Sanglah Denpasar selama periode Januari 2009 sampai Desember 2010.

Hasil: Angka kejadian HDK di RSUP Sanglah adalah 9,32%, terdiri dari hipertensi gestasional sebesar 1,82%, hipertensi kronik 0,19%, preeklampsia ringan 1,36%, preeklampsia berat 4,70%, super imposed preeklampsia 0,43% dan eklampsia sebesar 0,82%. Dari seluruh kasus HDK, mayoritas merupakan primigravida (47,23%), primipaternalitas (53,1%), dan diketahui tekanan darah tinggi pada saat aterm (51,9%). HDK paling banyak terdapat pada kelompok usia > 35 tahun (14,62%), diikuti oleh kelompok usia < 20 tahun (13,47%). Sebanyak 69,09% kasus HDK telah melakukan antenatal care (ANC) $\geq 4x$, dan ANC paling banyak di bidan (52,76%) kemudian di SpOG (40,81%). Sebagian besar kasus HDK merupakan kasus rujukan (62,39%) dengan mayoritas rujukan dari Bidan/BKIA (22,45%). Dari seluruh penderita HDK didapatkan total persalinan prematur adalah 35,14%, kematian perinatal sebesar 9,32%, dan kematian maternal sebesar 1,16%.

Kesimpulan: Angka kejadian HDK di RSUP Sanglah lebih tinggi dibandingkan dengan beberapa tahun sebelumnya. Mayoritas penderita HDK telah melakukan ANC di tenaga kesehatan, baik bidan maupun dokter spesialis kandungan. Dengan demikian kualitas ANC mungkin perlu ditingkatkan melalui sistem rujukan yang lebih dini, sehingga kasus HDK, khususnya preeklampsia, dapat ditangani lebih dini.

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Kata kunci: hipertensi dalam kehamilan, preeklampsia, eklampsia, deskriptif

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INTRODUCTION

HIP is the terminology used to describe a wide spectrum of pregnant women with increased blood pressure. Preeclampsia, which is a part of HIP, is a state of increased blood pressure in pregnancy that is accompanied by proteinuria in pregnancy. Worldwide, preeclampsia is still a major cause of maternal and infant morbidity and mortality.¹ It complicates 5 to 10 percent of all pregnancies in the world.^{2,3} In Western countries, it is estimated that one third of babies born from preeclamptic patients have intrauterine growth restriction.⁴ Preeclampsia also increases perinatal mortality in developed countries up to 5 fold.¹

In Indonesia, the incidence of HIP ranges from 3.4 to 8.5% and is the second cause of maternal death (24%) after hemorrhagic postpartum.⁵ Previous studies at Sanglah Hospital, it was reported that the prevalence of HIP from 2004 to 2005 to be 6.06% (mild PE 2.46%, severe PE 2.57%, and eclampsia 0.61%)⁶, and 2002 to 2003 to be 5.83% (mild PE 2.03%, severe PE 2.46%, and eclampsia 0.39%).⁷ In 1997 a special study at Sanglah Hospital reported that the prevalence of severe preeclampsia was 1.82% and eclampsia 0.25%.⁸

There are a lot of risk factors for HIP, especially preeclampsia, which can be grouped as follows: Nulliparity, primipaternality, hyperplacentosis, such as

hydatidiform mole, multiple pregnancy, diabetes mellitus, hydrops fetalis, large baby, age less than 20 years or more than 35 years, family history of preeclampsia/eclampsia, renal disease and or hypertension that has already existed before the pregnancy, and obesity.⁹

A lot of studies have been done for preeclampsia to identify the risk factors, etiology, and intervention for the disease.¹⁰ However, the evidence based medicine shows that to this day, any efforts to prevent the onset of preeclampsia, has not been clinically proven effective.¹¹⁻¹³

METHOD

This is a retrospective descriptive study in which data was obtained from all HIP cases at Sanglah Hospital, Denpasar from January 2009 to December 2010 the data were processed and calculated.

RESULTS

During the 2 years period of the study, 3,679 deliveries were recorded and HIP was found in 343 cases (9.23%) consisting consists of gestational hypertension (1.82%), chronic hypertension (0.19%), mild preeclampsia (1.36%), severe preeclampsia (4.70%), superimposed preeclampsia (0.43%) and eclampsia (0.82%). The prevalence of HIP in subjects with maternal age < 20 years was 13.47%, age 20-35 years was 8.04%, and age > 35 years was 14.62%. Most of the cases (53.1%) were primiparous. It was revealed that 47.23% from all cases were nulliparous, 38.77% were the second or third pregnancy, and 13.99% were the fourth or more pregnancy. Nulliparous was the major factor in each group for mild preeclampsia (46%), severe preeclampsia (47.40%), and eclampsia (63.3%).

From all cases, we found that 69.09% patients had ANC frequency more than 4 times, and 27.98% had ANC frequency between 1 to 4 times. Most of the cases had ANC done by midwives (52.76%), and followed by Obstetricians (40.81%). Only 2.95% subjects who never check their pregnancy. In every subgroup of HIP characteristic of ANC frequency > 4x predominated 77.6% for gestational hypertension, 100% for chronic hypertension, 68% for mild preeclampsia, 64.7% for severe preeclampsia, 81.25% for SiPE, and 63.33% for eclampsia.

Most of HIP cases at Sanglah Hospital (62.39%) were referral cases and the major referrer (24.2%) were midwives, for the eclampsia group, the majority of referral cases came from other hospitals (52.9%).

Majority of the cases (51.90%) were known to have high blood pressure at term or >37 weeks. For each subgroup of HIP, which were preeclampsia, superimposed preeclampsia and severe preeclampsia, hypertension in week 28-37 occurred in 70%, and 53% of cases respectively. From most the severe preeclampsia group, most systolic pressures (91.32%) were in the range of 160-179 mmHg and diastolic pressure (73.99%) were in a range of 110-119 mmHg. For the eclampsia group, 60% of systolic blood pressures were obtained at the range of 160-179 mmHg

while 60% of diastolic ones were obtained at a range of 110-119 mmHg.

The proportion of HELLP syndrome from all HIP cases was 15.7%. The highest prevalence of HELLP syndrome was found in the eclampsia group (46.15%), followed by the severe preeclampsia (21.4%) and superimposed preeclampsia (18.75%). Most seizures in eclampsia occurred during the antepartum period (80%), while the prevalence of intrapartum and postpartum seizures was 10%.

Majority of HIP cases were delivered as spontaneous vaginal delivery (36.44%), followed by Cesarean Section (CS) (34.11%) and forceps extraction (25.47%). For the severe preeclampsia group, most deliveries were assisted by forceps extraction (46.24%) followed by CS (42.77%). In the eclampsia group, 53.33% were born by CS. Only 0.87% of HIP cases were treated by conservative treatment because of preterm gestational age.

From all HIP cases we found that the rate of infant birth weight being less than 2500 grams was 35.14%. Meanwhile, the prevalence of IUGR was 8.82%. The perinatal mortality rate was 9.32%, which consisted of 3.20% intrauterine fetal demise and 6.12% early neonatal mortality. Viewed from the total number of perinatal deaths at Sanglah Hospital, HIP was associated with 13.5% of perinatal mortality.

From the total of 20 cases of maternal mortality at Sanglah Hospital, it was found that four cases were related to HIP (20%). The four maternal cases was 1.16% from total HIP cases. These four cases were severe preeclampsia with pneumonia and sepsis, eclampsia with multi-organ failure, eclampsia with solutio placenta complicated by DIC, and (4) eclampsia with complications of CVA (cerebrovascular accident). From all maternal deaths, 50% of them suffered HELLP syndrome.

From all HIP cases, we found that the percentage of patients who stayed for 0-3 days in hospital was 52.77%, 4-7 days was 39.94%, and 8-10 days was 4.66%. Only 2.62% of patients who stayed more than 10 days in hospital.

DISCUSSION

From this study it was found that the prevalence of HIP (including mild PE, severe PE, and eclampsia) was higher when compared with the previous years at Sanglah Hospital.

The prevalence difference can be influenced by a lot of factors, such as patient characteristics, genetic factors, quality referral system and ANC to screen HIP cases. For patient characteristics, factors include maternal age <20 years or >35 years, nulliparity, or primipaternity.^{3,11,12} For genetic factors, currently in Bali and especially at Sanglah Hospital, a lot of patients were not Balinese. Since the patients were more pluralistic, it further investigation is needed to see whether genetic factors (e.g certain ethnic) influence the occurrence of HIP. On the other hand, the referral system might be an important factor that could alter the prevalence rate of HIP. There was a tendency that patients with severe preeclampsia or eclampsia in Bali would be referred to Sanglah Hospital because of some reasons. We believed that these

referral system could increase the proportion of HIP cases at Sanglah Hospital, which in turn could affect the data that we obtained.

HIP cases were mostly found in the age group >35 years and was followed by age group <20 years. These result was similar to most studies that show a 'J-shaped' curve for relationships between maternal age and the incidence.¹⁴ Older or younger maternal age means higher risk for HIP, means and higher incidence in those who more than 35 years old.^{3,14} Based on the number of pregnancies, the highest prevalence of HIP was in nulliparous and primipaternity. These findings also fit the literatures, where it is said to be associated with immunological processes because of exposure to paternal antigens.^{3,12,13} High prevalence rate of HIP in primipaternity cases should be given more attention when performing ANC. Associated with the risk for preeclampsia, primipaternity should be regarded as nulliparous.^{13,14}

Most patients with HIP had an ANC frequency $\geq 4x$. Most of them checked their pregnancy at practices run by midwife and then followed by Obstetricians, only 2.93% cases who never controlled their pregnancy. This suggests that the ANC program had a good coverage and the midwives were the primary health provider for ANC. However in most cases (51.90%) high blood pressure was known when gestational age at term. While literature says that the majority of HIP cases are known in late pregnancy or near term.¹⁴ This differentiation may be related to the quality of the ANC which was still unoptimal.

At Sanglah Hospital, the prevalence of HELLP syndrome appeared to be related with severity of the disease. It was obtained from our study that 50% of maternal deaths were accompanied by the presence of HELLP syndrome.

From all of HIP in this study, most were delivered by spontaneous delivery (36.44%), followed by CS (34.11%) and forceps extraction (25.47%), whereas only 0.29% were done by for vacuum extraction. Especially for severe preeclampsia, most delivery were done by forceps extraction (46.24%). It seems that we need further evaluations to determine the best delivery method for HIP cases, especially for severe preeclampsia and eclampsia, so maternal and perinatal morbidity rate can be kept as low as possible.

Maternal mortality rate from HIP cases at Sanglah Hospital was 1.16%. After we counted from the total 20 cases of all maternal deaths in 2-year periode of this study, maternal death related to HIP was counted as many as 4 cases (20%). This was consistent with the literature in developed countries, where maternal mortality rate related to HIP was between 15-20%.^{3,12,14}

CONCLUSION

The prevalence of HIP at Sanglah Hospital was higher than previous years. HIP cases were dominated by severe preeclampsia. The major characteristic of patients in HIP were nulliparity and primipaternity. Most of the cases already had ANC done by health care providers, which only were midwives and doctors. Thereby the quality of ANC needed to be improved by earlier referral system to referral hospitals, so the cases could be treated earlier.

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