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THE INCIDENCE AND OBSTETRIC OUTCOME OF PREGNANCY IN HYPERTENSIVE DISORDERS

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Abstract:

Aims: *To know the prevalence, maternal demographic characteristics and obstetric outcomes of gestational hypertension disorders.*

Study design: *descriptive study*

Location and Duration: *This study was conducted at Gynae Unit-I of Nishtar Hospital Multan for one-year duration from May 2019 to May 2020.*

Subjects and methods: *All pregnant women admitted with arterial hypertension within one year were included in the study. A special proforma has been designed to record demographic data.*

Result: *During the study period, 3.2% of pregnant women were admitted with hypertension disorders. Most of them were aged 21-35, couple 1-3, and belonged to the low socio-economic class. Seventy percent had gestational hypertension, 21% had pre-eclampsia, and 9% had chronic hypertension. About 82% of cases had moderate to severe hypertension and 3.7% had eclampsia. 59% of women gave birth by vaginal delivery and 41% had a cesarean section. Women with pre-eclampsia / eclampsia had a higher risk of perinatal morbidity and mortality and had adverse perinatal outcomes compared to women with gestational hypertension in this study.*

Conclusion: *This study revealed that hypertension disorders in pregnancy are a major challenge for obstetricians, contributing to adverse pregnancy outcomes and perinatal outcomes. There is an urgent need to increase awareness of prenatal pre-booking and to provide emergency maternity care services at your fingertips to improve obstetric outcomes.*

Key words: *gestational hypertension, pre-eclampsia, eclampsia, chronic hypertension, perinatal death.*

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INTRODUCTION:

Gestational hypertension is a serious health burden in the obstetric population because it is one of the main causes of perinatal and perinatal morbidity and mortality. It includes pre-eclampsia / eclampsia (PE / E), gestational hypertension, chronic hypertension (CH) and chronic hypertension superimposed on pre-eclampsia. Each category has a different pathophysiology and consequences for the fetus. The overall prevalence in the world ranges from 12 to 22%. Preeclampsia, which can develop unpredictably into eclampsia, is a life-threatening complication of pregnancy. The incidence of PE is approximately 5-8% of all pregnancies. WF / E contributes to the death of the mother every three minutes worldwide. Chronic hypertension complicates approximately 5% of all pregnancies and is becoming more frequent due to delayed delivery. Role in preventing the devastating effects of hypertensive disorders in developed countries. However, in developing countries such as Pakistan, social and financial constraints are a major obstacle to referring pregnant women to antenatal clinics with no chance of early diagnosis. The purpose of this study was to understand the prevalence of hypertensive disorders in pregnancy, maternal demographics, and tertiary hospital obstetric outcomes, so that strategies can be developed to avoid adverse outcomes given our circumstances.

METHOD:

This descriptive study was conducted at the Department of Obstetrics and Gynecology, of Nishtar Hospital Multan for one-year duration from May 2019 to May 2020. During the one-year study, pregnant women with hypertension disorders who were admitted to the emergency or outpatient department were included in the study. Pre-eclampsia was defined according to the International Society for Study of Hypertension in Pregnancy. This requires two records of diastolic blood pressure of 90 mm Hg or higher separated by at least 4 hours, or one record of diastolic blood pressure of 120 mm Hg in a woman with previous normal blood pressure and urinary protein excretion of at least 300 mg in 24 or two hours. Eclampsia was defined as the occurrence of seizures in women with pre-eclampsia that cannot be attributed to other causes. Gestational hypertension was diagnosed when two or more diastolic blood pressure records of 90 mm Hg or more separated by at least 4 hours, or one diastolic blood pressure of 120 mm Hg in a woman who had previously had normal blood pressure, appeared after 20 weeks of pregnancy without proteinuria. Chronic hypertension was diagnosed when women had hypertension either before or before the 20th week of pregnancy. Hypertension was classified as mild if the diastolic blood pressure was 90 mm Hg, moderate if> 91 but <110 mm Hg, and severe if> 110 mm Hg.

RESULTS:

During the study period, 4,189 pregnant women were admitted to the maternity ward. About 3.2% of women (n = 133) were diagnosed with hypertensive disorders. Fifteen women were left without medical advice and 11 were discharged upon request and never returned, so only 107 obstetric results were included in this study. In the group of pregnant women with arterial hypertension disorders, 74 (69.16%) women were diagnosed with gestational hypertension, including 4 twin pregnancies, 23 (21.49%) pre-eclampsia, and 10 (9.35%) chronic hypertensions. Most of the cases were between the ages of 21 and 35, had 1–3 births and belonged to the low socio-economic class. About 83% of women with pre-eclampsia did not have a single antenatal check. (Table I) History of hypertensive disease occurred in 17 women (15.9%), of which 4 women (23.5%) had a history of eclampsia. 29 women (27.1%) also had family history of hypertension. In the subgroup of preeclampsia, 14 women (60.9%) had severe degree of hypertension, of which 6 (42.85%) had eclampsia.

Table I: Demographic and clinical data of subjects in study group

Pathological findings	Pre-eclampsia (n=23)	Gestational Hypertension (n=74)	Chronic Hypertension (n=10)	Total (n=107)
Hypertension				
Mild	1(4.34%)	18(24.32%)		19(17.75%)
Moderate	8(34.78%)	47(63.51%)	8(80%)	63(58.87%)
Severe	14 (60.86%)	9(12.16%)	2 (20%)	25(23.36%)
Proteinuria	23(100%)		2(20%)	25(23.36%)
↑ Fibrinogen degradation products	12(52.17%)	6 (8.1%)	1(10%)	19(17.75%)
↑ Prothrombin time/Partial thromboplastin time	10(43.4%)	18(24.32%)	1(10%)	29(27.10%)
Deranged Liver function test	2 (8.69%)		1(10%)	3(2.80%)
Deranged Renal function test	7(30.43%)	4(5.4%)	1(10%)	12(11.21%)
Abnormal Glucose tolerance test		1(1.35%)		1(0.93%)

About 4% of women had placental abruption in the PE / E and gestational hypertension subgroups. Approximately 40% of women with PE developed renal or hepatic impairment (Table II).

Table II: Pathological findings in study group

Pathological findings	Pre-eclampsia (n=23)	Gestational Hypertension (n=74)	Chronic Hypertension (n=10)	Total (n=107)
Hypertension				
Mild	1(4.34%)	18(24.32%)		19(17.75%)
Moderate	8(34.78%)	47 (63.51%)	8(80%)	63(58.87%)
Severe	14(60.86%)	9(12.16%)	2 (20%)	25(23.36%)
Proteinuria	23(100%)		2 (20%)	25(23.36%)
↑ Fibrinogen degradation products	12(52.17%)	6(8.1%)	1(10%)	19(17.75%)
↑ Prothrombin time/Partial thromboplastin time	10(43.4%)	18 (24.32%)	1(10%)	29(27.10%)
Deranged Liver function test	2(8.69%)		1(10%)	3(2.80%)
Deranged Renal function test	7(30.43%)	4(5.4%)	1(10%)	12(11.21%)
Abnormal Glucose tolerance test		1(1.35%)		1(0.93%)

The abnormal clotting profile has mainly occurred in women with pre-eclampsia. The termination of pregnancy was caused by inducing labor in 29 women (27%). About 59% of women have had a vaginal delivery; while 11 women (10.47%) had elective and 32 (30%) urgent cesarean sections (Table III). Two women with eclampsia died shortly after being admitted before giving birth. In the analyzed period, 28 (25.22%) perinatal deaths were recorded, most of which were stillbirths (Table III). The highest perinatal mortality (39%) was reported in the subgroup with pre-eclampsia / eclampsia.

Table III: Obstetric outcome of study group

Pathological findings	Pre-eclampsia (n=23)	Gestational Hypertension (n=74)	Chronic Hypertension (n=10)	Total (n=107)
Mode of Delivery				
Normal vaginal	13(61.90%)	41(55.40%)	6 (60%)	60(57.14%)
Instrumental delivery	1(4.76%)		1(10%)	2(1.90%)
Caesarean section				
Emergency	7(33.33%)	24(32.43%)	1(10%)	32(30.47%)
Elective		9(12.16%)	2 (20%)	11(10.47%)
Died Undelivered	2(8.69%)			2 (1.86%)
Perinatal Consequences	**N =23**	**N=78 (4 twins)**	**N=10**	**Total =111**
Intrauterine death (undelivered maternal death)	2(8.69%)			2 (1.80%)
Still Births	4(17.39%)	12(15.38%)	3(30%)	20(17.11%)
Early Neonatal Death	3 (13.04%)	4(5.12%)		5(6.30%)
Premature	12(52.17%)	28(35.89%)	4 (40%)	44(41.12%)
Growth retarded	2 (8.69%)	5(6.41%)	1(10%)	8 (7.47%)
pgar score	**N=17**	**N=66**	**N=7**	**N=90**
At 1 min <5	3 (17.64%)	4(6.06%)	0	7(7.77%)
>5	14(82.35%)	62(93.93%)	7 (70%)	83(92.22%)
At 5 min <5	3(17.64%)	3(4.54%)	0	6(6.66%)
>5	14(82.35%)	63(95.45%)	7(70%)	84 93.33%
Prolonged admission in Nursery	4(23.52%)	9 (13.63%)	3(30%)	16(17.77%)

DISCUSSION:

This study presents data on the prevalence, maternal demographics, and obstetric outcomes of pregnant women with hypertension over a one-year period at a Lahore Level 3 Hospital in Pakistan. The prevalence of hypertensive disorders in our hospital is around 3.2%, which is 3.3%, similar to the neighboring country, Iran. The second recorded incidence was 4.6% in Africa, 5.3% in Ethiopia8 and Nigeria, 5.9% in the US and 7.5% in Brazil. This variability may be due to racial, social and environmental differences between these populations. The incidence of gestational hypertension in this study (69%) was significantly higher than in pre-eclampsia (21%). Poonyth et al. Also reported a higher incidence of gestational hypertension (70%) in their study compared to PE (24%), while Familonia et al. Published an incidence of 54% for PE / E and 26% for gestational hypertension in the study population. . About 28% of the test subjects were primigravida, in

contrast to an Indian study that revealed 57% primigravida. In the PE subgroup in the current report, approximately 22% of women were protozoa. However, in the literature, non-origin is a significant risk factor for pre-eclampsia / eclampsia. AlMulhim et al. Reported pre-eclampsia in a high percentage (40%) of women at the extreme reproductive age, while in another study 27% were teenagers, in contrast to the current series where only 8% were> 20 years old and <36 years. Pre-eclampsia / eclampsia was common among unaccounted emergencies and low social class, as in our observations. Recurrence of hypertension-related disorders in pregnancy is a common phenomenon and concerns 16% of our patients. Pre-eclampsia is a heterogeneous disorder of unknown etiology that exhibits a significant genetic component. In the present study, due to illiteracy and poor health concepts of women, the exact type / cause of hypertension in family members was difficult to determine, but approximately 9% of the study population in the PE group had some type of hypertension in family members. Surgical deliveries are reported to be more common in hypertension-related disorders of pregnancy, and the Caesarean section rate is approximately 44% 8–59% 2. In our study, 41% of women were delivered via Caesarean section. In our study, there were two maternal deaths (1.8%) due to eclampsia. Both women died undelivered right after admission because they were hospitalized in such a serious condition that there was no chance of survival. Death before childbirth is also cited in a study conducted in Nigeria. In another center in Pakistan, maternal deaths from eclampsia were reported to be 16%, but only those with eclampsia were recruited in this study and not those with pregnancy-related hypertension in general. Negative perinatal outcomes from hypertension in pregnancy, according to this report, are similar to many other studies.

CONCLUSION:

The morbidity and mortality of fetuses and mothers associated with hypertension are worrying, especially in developing countries. This is due to inadequate antenatal surveillance and the management of these cases in a less favorable context. Emphasis should be placed on community health education, women's status and reproductive health issues. Antenatal surveillance measures should be on the threshold. The high-risk obstetric population should be screened earlier in pregnancy. There should be an early-control system and better means of transport to direct such cases. Regular fetal monitoring in the event of high risk should be under the care of specialist doctors, and births in such cases should take place in a well-equipped hospital to minimize adverse pregnancy outcomes and perinatal outcomes.

REFERENCES:

1. Krishna, Kajal, and Shazi Qureshi. "To evaluate maternal outcome in hypertensive disorders of pregnancy at tertiary care Centre." *Mortality* 4: 2.
2. Yashwant, Jagdale Supriya, and Kakade Aniket Shashikant. "Clinical Study of Hypertensive Disorders in Pregnancy."
3. Idris, Haruna, Nwachukwu Chiemezie Nwagbo Duum, Umar Gati Adamu, Rasheedat Morayo Abdullateef, and Isah Aliyu Yabagi. "Hypertensive disorders in pregnancy: Pattern and obstetric outcome in Bida, Nigeria." *Nigerian Medical Journal: Journal of the Nigeria Medical Association* 61, no. 1 (2020): 42.
4. Suzumori, Nobuhiro, Takeshi Ebara, Taro Matsuki, Yasuyuki Yamada, Sayaka Kato, Toyonori Omori, Shinji Saitoh, Michihiro Kamijima, Mayumi Sugiura-Ogasawara, and Japan Environment & Children's Study Group. "Effects of long working hours and shift work during pregnancy on obstetric and perinatal outcomes: A large prospective cohort study—Japan Environment and Children's Study." *Birth* 47, no. 1 (2020): 67-79.
5. Kyozuka, Hyo, Tsuyoshi Murata, Toma Fukuda, Akiko Yamaguchi, Aya Kanno, Shun Yasuda, Akiko Sato et al. "Association between pre-pregnancy calcium intake and hypertensive disorders during the first pregnancy: the Japan environment and children's study." *BMC Pregnancy and Childbirth* 20, no. 1 (2020): 1-8.
6. Barton, John R., George R. Saade, and Baha M. Sibai. "A proposed plan for prenatal care to minimize risks of COVID-19 to patients and providers: focus on hypertensive disorders of pregnancy." *American journal of perinatology* 37, no. 8 (2020): 837.
7. Roca, Gabriela Querejeta, Jacquelyne Anyaso, Susan Redline, and Natalie A. Bello. "Associations between sleep disorders and hypertensive disorders of pregnancy and materno-fetal consequences." *Current Hypertension Reports* 22, no. 8 (2020): 1-9.
8. Saito, Kazuki, Akira Kuwahara, Tomonori Ishikawa, Naho Morisaki, Mami Miyado, Kenji Miyado, Maki Fukami et al. "Endometrial preparation methods for frozen-thawed embryo transfer are associated with altered risks of hypertensive disorders of pregnancy, placenta accreta, and gestational diabetes

mellitus." *Human Reproduction* 34, no. 8 (2019): 1567-1575.

9. Mogos, Mulubrhan F., Lenette M. Jones, Nadia S. Robinson, Antonette O. Whitehead, Ronald Piscotty, and Gelila K. Goba. "Prevalence, correlates, and outcomes of co-occurring depression and hypertensive disorders of pregnancy." *Journal of Women's Health* 28, no. 11 (2019): 1460-1467.
10. Bailey, Beth, Anna G. Euser, Kirk A. Bol, Colleen G. Julian, and Lorna G. Moore. "High-altitude residence alters blood-pressure course and increases hypertensive disorders of pregnancy." *The Journal of Maternal-Fetal & Neonatal Medicine* (2020): 1-8.
11. Wu, Pensée, Carolyn A. Chew-Graham, Angela HEM Maas, Lucy C. Chappell, Jessica E. Potts, Martha Gulati, Kelvin P. Jordan, and Mamas A. Mamas. "Temporal Changes in Hypertensive Disorders of Pregnancy and Impact on Cardiovascular and Obstetric Outcomes." *The American Journal of Cardiology* (2020).
12. Njukang, Nkem Ernest, E. G. B. E. Thomas Obinchemti, Martin Sama, Tah Aldof Yoah, and Joseph Kamgno. "Prevalence and Risk Factors of Hypertensive Disorders in Pregnancy: Case of Mezam Division, NWR Cameroon." *Journal of Womens Health and Development* 3, no. 3 (2020): 247-267.
13. Paruk, Fathima. "Critically ill obstetric patients with hypertensive disorders of pregnancy: Room for improvement." *Southern African Journal of Critical Care (Online)* 35, no. 2 (2019): 43-44.
14. Wu, Pensée, Kelvin P. Jordan, Carolyn A. Chew-Graham, Thais Coutinho, Gina P. Lundberg, Ki E. Park, Lucy C. Chappell, Phyo K. Myint, Angela HEM Maas, and Mamas A. Mamas. "Temporal trends in pregnancy-associated stroke and its outcomes among women with hypertensive disorders of pregnancy." *Journal of the American Heart Association* 9, no. 15 (2020): e016182.
15. Ahsan, Nikhat, Farrukh Naheed, and Farheen Shiekh. "Hypertensive Disorders of Pregnancy and Its Associated Fetomaternal Complications." *Journal of Surgery Pakistan* 24 (2019): 4.