

Pregnancy Hypertensive Disorders Frequency and Obstetric Outcome

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ABSTRACT

Background: The most common medical problem faced during pregnancy is called hypertension. Pregnancy hypertensive disease is also known as maternal hypertensive disorder. Hypertensive disorder is a group of diseases which include gestational hypertension, chronic hypertension, pre-eclampsia and eclampsia.

Aim: To find out the demographic characteristics maternal, frequency and obstetric outcome of pregnancy hypertensive disorders.

Methods: This descriptive study was conducted at Holy Family Hospital, Rawalpindi during the period from 18.06.2016 to 20.07.2017. Pregnant females with hypertensive disorders were admitted during the period of this study.

Results: During the period of this study, 3.2% pregnant females with hypertensive disorders were admitted. Majority of pregnant females were between 21 years to 35 years of age, para 1-3 & belong to low socio-economic class. In this study, 70% females presented gestational hypertension, preeclampsia 21% and with chronic hypertension were 9%. In our study, approximately 82% cases had moderate to acute hypertension whereas, 3.7% had eclampsia. Vaginal delivered females were 59% while 41% females had caesarean section. Females with eclampsia / pre-eclampsia had high risk of mortality and maternal morbidity and had unfavorable / bad perinatal outcomes as compared to females with gestational hypertension.

Conclusion: This study divulges pregnancy hypertensive disorders as a obstetricians main challenge contributed to unfavorable maternal and perinatal outcome. To improve the obstetric outcomes, there is need to give awareness on early antenatal booking and also provide emergency obstetric care services at door steps.

Keywords: Eclampsia, Pre-eclampsia, Gestational Hypertension, Perinatal Death,

INTRODUCTION

In obstetric population, pregnancy hypertensive disorders are main burden on health as it is one of the major causes of perinatal and maternal mortality and morbidity¹. It can be categorized as pre-eclampsia/eclampsia (PE/E), chronic hypertension (CH), chronic hypertension superimposed pre-eclampsia and gestational hypertension. Each category has different fetomaternal and pathophysiology outcomes. Between 12% to 22% incidence all over the world^{1,2}. Pre-eclampsia which uncertainly can develop to eclampsia is a life threatening pregnancy complication. Approximately 5% to 8% incidence of pre-eclampsia (PE) of all pregnancies². All over the world after every three minutes maternal death contributed by pre-eclampsia/eclampsia³.

About 5% of all pregnancies complicated by chronic hypertension and become more general due to belated child bearing⁴. A role in forestalling destructive consequences of hypertension disorders urbanized world.

In developed countries like Pakistan, financial as well as social limitations are main obstruction for referral of pregnant females in clinics without any chance of initial recognition of the problem.

This study was aimed to find the pregnancy hypertensive disorders frequency, obstetric outcomes and maternal demographic characteristics so that the policies could be made to avert from the unfavorable outcome in context of our situations.

MATERIALS AND METHODS

The present descriptive study was conducted at obstetrics and gynecology unit of Holy Family Hospital, Rawalpindi from 18.06.2016 to 20.07.2017. Holy Family Hospital, Rawalpindi is a tertiary care hospital. During the period of present study those pregnant females were included, either admitted through emergency or out-patient department, who have hypertensive disorders. In the light of international society for study of pregnancy hypertension, preeclampsia was defined.^[5] This needs diastolic blood pressure of 90mm hg or higher at least four hours separately two recordings and 120mm hg diastolic blood pressure one recording in a previously normotensive females and at least 300

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mg excretion of urine protein in twenty four hours or 2 readings of 2+ on midstream dipstick analysis or catheter urine specimens / samples, if no twenty four hours collection was available. Eclampsia was described as the existence of seizures in pre-eclampsia females where seizures cannot attribute to other causes. Gestational hypertension was identified if 2 recordings of DBP (Diastolic Blood Pressure) of 90mm hg or high at least four hours separately or 1 recording of DBP of 120mm hg in prior normotensive females, first come in view after twenty weeks of pregnancy without proteinuria. Chronic hypertension was identified if females in pre-eclampsia had hypertension or twenty weeks before pregnancy. If diastolic blood pressure was recorded 90mm of hg than hypertension was categorized as mild, if diastolic blood pressure \geq 91mm but \leq 110mm hg than moderate and $>$ 110mm hg diastolic blood pressure was classified as sever.

RESULTS

During the period of this study, 8378 pregnant females were admitted in obstetric ward. 266 females (3.2%) were diagnosed hypertensive disorders. Against medical advice 30 females were left and on request 22 females were discharged and they never come back, therefore only 214 cases of obstetric outcome were included in this present study. In pregnant hypertensive disorder females group, 148 females (69.16%) were identified gestational

hypertension, out of which eight have twin gestation, 46 (21.49%) females diagnosed pre-eclampsia and 20 (9.35%) females had chronic hypertension. The age range of majority cases was 21 years to 35 years with parity of 1-3 and belongs to low socio-economic class. About 83% pre-eclampsia females had no single antenatal checkup (Table 1).

In 34 females (15.9%) hypertensive disorders post history was present, out of which 8 females (23.5%) with post history of eclampsia. Family history of hypertension was present in 58 (27.1%) females. 28 females (60.9%) had acute level of hypertension in pre-eclampsia sub group, out of them 12 (42.85%) females had eclampsia. In the groups of gestational and pre-eclampsia / eclampsia hypertension about 4% of females had placental abruption. About in 40% of pre-eclampsia females renal or liver functions were impaired as shown in Table 2. Mainly in pre-eclampsia females abnormal coagulation profile was present. By induction of labour in 58 females (27%) pregnancy termination was carried. Females who had vaginal delivery were about to 59%, while 22(10.47%) and 64 (30%) females had elective and emergency C-Section respectively as shown in Table 3. Just after admission and before delivery, 4 females with eclampsia were died. During the period of study, there were 56(25.22%) perinatal deaths in which majority were still birth (Table-3). In pre-eclampsia / eclampsia sub group, there was highest perinatal mortality i.e., 39% seen.

Table 1: Clinical Data and Demographic

Findings of Pathology (Hypertension)	Gestational Hypertension (n=148)	Pre-eclampsia (n=46)	Ch. Hypertension (n=20)	Total (n=214)
Mild	36(24.32%)	2(4.34%)	--	38 (17.75%)
Moderate	94(63.51%)	16 (34.78%)	16(80%)	126(58.87%)
Acute/Severe	18 (12.16%)	28(60.86%)	4(20%)	50(23.36%)
Proteinuria	--	46(100%)	4(20%)	50(23.36%)
Prothrombin Time / Partial Thrombop-lastin Time	36 (24.32%)	20(43.4%)	2(10%)	58(27.10%)
Fibrinogen Degradation Products	12 (8.1%)	24(52.17%)	2(10%)	38(17.75%)
Deranged Renal function Test	8 (5.4%)	14(30.43%)	2(10%)	24(11.21%)
Deranged Liver Function Test	--	4(8.69%)	2(10%)	6(2.80%)
Abnormal Glucose Tolerance Test	2 (1.35%)	--	--	2(0.93%)

Table 2: Pathological Findings

Hypertension	Gestational Hypertension (n=148)	Pre-eclampsia (n=46)	Ch. Hypertension (n=20)	Total n=214)
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Table-3: Obstetric Outcome

Findings of Pathology	Gestational Hypertension (n=148)	Pre-eclampsia (n=46)	Chronic Hypertension (n=20)	Total (n=214)
Delivery Mode				
Vaginal (Normal)	82(55.40%)	26(61.90%)	12(60%)	120(57.14%)
Instrumental	--	2(4.76%)	2(10%)	4(1.90%)
Caesarean Section				
Elective	18(12.16%)	--	4(20%)	22(10.47%)
Emergency	48(32.43%)	14(33.33%)	2(10%)	64(30.47%)
Died Undelivered	--	4(8.69%)	--	4(1.86%)
Perinatal Outcome				
	n=156 (8 Twins)	n=46	n=20	n=222
Undelivered Maternal Death (Intra-uterine Death)	--	4(8.69%)	--	4(1.80%)
Early Neonatal Death	8(5.12%)	6(13.04%)	--	10(6.30%)
Premature	56(35.89%)	24(52.17%)	8(40%)	88(41.12%)
Growth Retarded	10(6.41%)	4(8.69%)	2(10%)	16(7.47%)
Still Births	24(15.38%)	8(17.39%)	6(30%)	40(17.11%)
PGAR Score				
	N=132	n=34	n=14	n=180
<5 at one Minute	8(6.06%)	6(17.64%)	0	14(7.77%)
>5	124(93.93%)	28(82.35%)	14(70%)	166(92.22%)
<5 at Five Minutes	6(4.54%)	6(17.64%)	0	12(6.66%)
>5	126(95.45%)	28(82.34%)	14(70%)	168(93.33%)
Nursery Prolonged Admission	18(13.63%)	8(23.52%)	6(30%)	32(17.77%)

DISCUSSION

This study presented the data regarding maternal demographic characteristics, prevalence and pregnant female's obstetrical outcomes with hypertensive disorders. In our hospital 3.2% approximately frequency of hypertensive disorders. It is similar to neighbor country which reported incidence about 3.2% in Iran⁶. In Africa reported incidence was 4.6%⁷, Ethiopia reported 5.3%⁸, Nigeria also reported 5.3%⁹, in USA it is 5.9%¹⁰ and in Brazil the reported incidence was 7.5%¹¹. This fluctuation might be due to social, racial and different environments between these populations/communities.

In this study, 69% frequency of gestational hypertension was higher than 21% frequency of pre-eclampsia. 70% gestational hypertension reported by Poonyth¹² in his study which is also higher incidence of gestational hypertension as compared to pre-eclampsia i.e., 24%, on the other hand Familonia et al⁹ reported 54% incidence for pre-eclampsia / eclampsia & 26% for gestational hypertension.

Between study cases, primigravida were 28% which is in contrast to a study conducted at India¹³ which reveal 57% primigravida. In present report, in the sub group of pre-eclampsia, about 22% females were primigravida. However, nulli-parity is a risk factor significantly for pre-eclampsia/eclampsia^{2,11,14}. Pre-eclampsia in a high percentage 40% of females at high level of reproductive age was reported by Al-Mulhim et al¹⁴ but 27% were teenagers in another

study in contrast with present series in which 8% were > 20 years of age and < 36 years of age.

Among low social class and un-booked emergencies pre-eclampsia/ clampsia were common as similar to our findings.^{15,16} Pregnancy hypertensive disorder is a general occurrence and 16% was to be reported in our patients. Pre-eclampsia is a assorted / heterogeneous disorders of unknown etiology but with a proof of a significant genetic component^{18,19}. Due to poor health concepts and illiteracy of females, accurate cause as well as type of hypertension in family members was tough to evaluate but in pre-eclampsia group approximately 9% study population had some kind of hypertensive disorders in members of family.

In pregnancy hypertensive disorders, the ratio of operative delivery is increased²⁰. The reported caesarean section rate is approximately 44% to 59%^{8,2}. In our study, caesarean section deliveries were reported in 41% females.

Due to eclampsia two maternal deaths (1.8%) take place in our study. Just after admission both females were died undelivered because they were brought in serious condition to the hospital and there was no chance of their survival. In Nigeria quoted death before delivery in a study,²¹ Due to eclampsia maternal death was reported 16% in another center of Pakistan but in present study only eclampsia patients were recruited and not of pregnancy hypertensive disorders in general.

Due to hypertensive disorders of pregnancy, adverse perinatal outcome was reported which is similar to various other studies^{2,8,21-23}.

CONCLUSION

In developing countries, the situation of hypertensive disorders especially associated with fetomaternal morbidity & mortality is much alarming. Inadequate antenatal surveillance as well as management of cases in low favorable context is the reason of fetomaternal morbidity & mortality linked with hypertensive disorders. Health education should be given to the community, deliver knowledge on issues pertaining to reproductive health and also on status of females. Door step facilities for antenatal surveillance should also be provided. High risk obstetric females should be examined earlier in pregnancy. Better system for referral early and better facilities of transportation for referral these cases should also be made. Under the supervision of specialist doctors, regular fetomaternal monitoring of high risk cases should be conducted and well equipped hospital should be used for deliveries of such cases to decrease the adverse / unfavorable perinatal and maternal outcome.

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