ORIGINAL ARTICLE

Obstetric Outcome in Preeclampsia: One Year Experience at a Tertiary Care Hospital

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ABSTRACT

Aim: To assess the frequency of maternal, fetal and neonatal complications in preeclampsia.
Method: The study was conducted from Jan 2014 to Dec 2014 in Ob/Gyn unit III, Jinnah hospital, Lahore. It was a cross sectional study. Sampling technique was convenient non probability. Objective of the study was to assess the frequency of maternal, fetal and neonatal complications in preeclampsia. 200 patients who were admitted in antenatal or labor ward having preeclampsia carrying singleton fetus at >20 weeks of gestation were included in the study. On the basis of severity, patients were divided in two groups. Group-1 with mild preeclampsia and group-2 with severe preeclampsia. Obstetric outcomes were compared between the two group. A p-value of < 0.05 was considered significant. Results: The mean ages in group -1 and group-2 were 25.65±2.38 years and 25±2.76 years respectively. 76(60%) of group-1 women while 60(82%) of group-2 women were un booked. Imminent eclampsia was found in 0.78% and 33% of group-1 and group-2 respectively. 0.78% of group-1 while 10% of group-2 had eclampsia. HELLP syndrome occurred in 4% of group-2 while no such case were noted in group-1. One case of placental abruption was seen in group-1 while this number was 2(2.73%) in group-2. Pulmonary edema and acute renal damage were observed in 8.2% and 2.73% of group-2 patients respectively. No case of pulmonary oedema noted in group-1. One patient in severe pre eclampsia group had intracranial haemorrhage. 45.6% of cases in group-1 and 65.7% in group-2 had cesarean section. Instrumental vaginal delivery was seen more frequently in group-2 then group-1 (8% VS 2.3%). 6(4.7%) cases of PPH observed in group-1 while this number was 7(10%) in the comparison group. Two maternal deaths occurred in severe disease arm. Conclusion: Preeclampsia is associated with high risk of adverse obstetric outcome, the severity of which depends upon the severity of preeclampsia. The maternal, fetal and neonatal outcome can be improved with adequate antenatal care facilities to the pregnant mothers.
Keywords: Preeclampsia, obstetric outcome.

INTRODUCTION

Preeclampsia (PE) is a common complication of pregnancy and associated with increased maternal and perinatal morbidity and mortality especially in developing countries[1]. It is a disorder of widespread vascular endothelial dysfunction and vasospasm that occurs after 20 weeks gestation and can present as late as 4-6 weeks postpartum. Clinically defined by hypertension and proteinuria, this disease is a great challenge for obstetricians because there are no effective interventions to manage or prevent it, and antenatal care involves a difficult balance between the risks for women to continue pregnancy and the hazards for baby's early birth[2]. Maternal complications include eclampsia, placental abruption, HELLP syndrome, pulmonary edema, acute renal damage and cerebrovascular accidents. Fetal complications in pre eclampsia (PE) are directly related to gestational age and the severity of maternal disease and include increased incidence of preterm delivery, intrauterine growth restriction (IUGR) and placental abruption. Infants born to hypertensive mothers have a 16% risk of perinatal death or severe morbidity and with 36% of them needing high level neonatal care[3,4]. Severe preeclampsia is associated with comparatively higher maternal and neonatal morbidity and mortality in developing countries like Pakistan where adequate antenatal care facilities are still not available to the pregnant mothers. The impact of the disease on the mother, fetus and the neonate needs to be highlighted and updated especially in developing countries where the incidences are high so that effective prevention and treatment strategies are developed and implemented to avoid the huge cost of critical care for the mother, the newborn and the long-term problems in the premature or intrauterine growth retarded baby. The present study aimed at assessment of extent of maternal, fetal and neonatal morbidity and mortality due to preeclampsia.

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SUBJECT AND METHOD

The study was conducted from Jan 2014 to Dec 2014 in Ob/Gyn unit III, Jinnah hospital, Lahore. It was a cross sectional study. Sampling technique was convenient non probability. Objective of the study was to assess the frequency of maternal, fetal and neonatal complications in preeclampsia. 200 patients who were admitted in antenatal or labor ward having preeclampsia carrying singleton fetus at >20 weeks of gestation were included in the study. Patients having medical disorders before pregnancy like hypertension, diabetes mellitus and renal impairment (on the basis of history, examination and investigations) were excluded from the study. Those having fetal congenital anomalies (diagnosed on ultrasound) were also excluded. Preeclampsia was defined as hypertension and hyperproteinuria developing after 20 weeks of pregnancy (a blood pressure of ≥140/90mmHg on two occasions at least 4 hours apart along with proteinuria of >300mg/24 hours or ≥2+ protein by dipstick on two urine samples taken at least 4 hours apart). Pre-eclampsia was considered as severe if a woman had one or more of the following; a blood pressure of ≥160mmHg systolic or ≥110mmHg diastolic, ≥ 3+ protein by dipstick on two urine samples taken four hours or more apart or 5g of protein in a 24 hour urine sample, epigastric or right upper-quadrant pain, blurring of vision, cerebral disturbances, abnormal liver function, pulmonary edema or cyanosis, fetal growth restriction, low platelets and oliguria of less than 500 ml in 24 hours. The data was collected on specially designed proforma. Observations such as maternal age, booking status, parity, maternal complications like imminent eclampsia (symptoms of severe headache, blurring of vision, hyperreflexia and epigastric /right hypochondrial pain), eclampsia (presence of seizures), abruptio placenta (history and clinical examination), pulmonary edema(history of dyspnea and presence of fine crepitations in chest), HELLP syndrome (evidenced by raised LDH, ALT/AST, platelets<100,000/cumm), postpartum hemorrhage (PPH), cerebrovascular accidents(intracranial hemorrhage or infarct diagnosed on CT scan or MRI), acute renal failure (evidenced by oliguria/anuria or raised serum creatinine level), mode of delivery, instrumental vaginal delivery and maternal death recorded. Fetal and neonatal observations included intrauterine growth restriction (IUGR), preterm delivery (delivery before 37 weeks of gestation), low birth weight (lbw), intrauterine fetal death (IUFD), early neonatal death (ENND). On the basis of severity, patients were divided in two groups. Group-1 with mild preeclampsia and group-2 with severe preeclampsia. Obstetric outcomes were compared between the two groups. A p-value of < 0.05 was considered significant.

RESULTS

The mean ages in group -1 and group-2 were 25.65+ 2.38 years and 25 + 2.76 years respectively. 127 patients fulfilled the criteria for group -1 i.e., mild pre eclampsia while 73 patients were of group-2 i.e., severe pre eclampsia. 76(60%) of group-1 women while 60(82%) of group-2 women were unbooked. Imminent eclampsia was found in 0.78% and 33% of group-1 and group-2 respectively. 0.78% of group-1 while 10% of group-2 had eclampsia. HELLP syndrome occurred in 3(4%) of group-2 while no such case were noted in group-1. One case of placental abruption was seen in group-1 while this number was 2(2.73%) in group-2. Pulmonary edema and acute renal damage were observed in 8.2% and 2.73% of group-2 patients respectively. No case of pulmonary oedema noted in group-1. One patient in severe pre eclampsia group had intracranial haemorrhage. 45.6% of cases in group-1 and 65.7% in group-2 had cesarean section. Instrumental vaginal delivery was seen more frequently in group-2 then group-1 (8% VS 2.3%). 6(4.7%) cases of PPH observed in group-1 while this number was 7(10%) in the comparison group. Two maternal deaths occurred in severe disease arm due to intracranial bleed and pulmonary edema. Comparison of obstetric complications is shown in table 1. 3.9% of patients in group-1 while 44% in group-2 delivered preterm. Low birth weight babies, IUGR and low 5-minute Apgar score were also higher in group-2. IUD and ENND were observed in 1(0.78%) and 3(2%) of group-1 respectively. These figures were 5(6.8%) and 12% respectively in group-2. Comparison of neonatal outcome (low birth weight, NNU admission) between the two groups is also shown in the table below;

Table-1: Obstetric complications in preeclampsia.

Variable	Group-1	Group-2	p-value
Imminent eclampsia	1(0.78%)	24(33%)	0.00001
Eclampsia	1(0.78%)	7(10%)	0.003
Abruption placenta	1(0.78%)	2(2.73%)	0.29
Pulmonary edema	0	6(8.2%)	0.004
Acute renal damage	0	2(2.73%)	0.29
HELLP syndrome	0	3(4%)	0.04
Cesarean section	58(45.6%)	48(65.7%)	0.01
Instrumental delivery	3(2.3%)	6(8%)	0.04
PPH	6(4.7%)	7(10%)	0.09
IUGR	7(5.5%)	12(16%)	0.009
prematurity	5(3.9%)	32(44%)	<.00001
Low birth weight	13(10.2%)	22(30%)	0.0003
NICU admission	25(19.6%)	35(48%)	0.0001
Early neonatal death	3(2%)	9(12%)	0.003

DISCUSSION

Preeclampsia is significantly associated with fetal and maternal morbidity and mortality [5]. Of all the cases in the study, 68% were unbooked and majority of them were in severe preeclampsia group showing lack of antenatal care. This is the reason that morbidity and mortality from preeclampsia is higher in developing countries[6]. The primary objective of management in women with preeclampsia is to protect the safety of the mother and the fetus and the subsequent delivery of a healthy baby[3]. Most of the patients having preeclampsia were unbooked (60% in group-1 and 86% in group-2).This is in accordance with the study performed by Ahmed M et al [7]. There is increased risk of certain maternal complications like imminent eclampsia, eclampsia, abruption placenta, pulmonary edema, acute renal damage and HELLP syndrome among those having severe preeclampsia. cesarean section, PPH and instrumental delivery were seen more frequently in severe disease arm (table-1). Result of the current study correlate with those performed by Sultana et al [4], Vitthal GK et al [8], Doddamani GB et al [9] and others [7,10] .Two maternal deaths occurred in severe preeclampsia group. Both were primigravidas and unbooked from remote rural areas. One of them had massive pulmonary edema along with eclampsia while the other had intracranial bleed. In women with severe features of preeclampsia, especially those who are preterm, preterm delivery may be required, leading to neonatal problems related to prematurity. Severe preeclampsia represents significant risk factor for intrauterine fetal demise. Moreover, Preeclampsia is the commonest cause of IUGR and low birth weight babies in the non anomalous infant[11]. Our study has shown the increased risk of IUGR , IUFD , premature delivery, LBW babies , NICU admission and early neonatal death in those having severe disease. Placental abruption caused IUFD in 2 cases of severe preeclampsia and the one in mild preeclampsia group. Result of our study correlate with those performed by Gawde A et al[6], Jido TA et al[1], Kiondo P et al[12] and others [9].Current study is not without limitations as it was conducted at tertiary care referral center and with the possibility of number of referrals in mild preeclampsia were not as many as that of severe preeclampsia. Going forward, further studies are needed to evaluate the long term neonatal complications and different treatment modalities.

CONCLUSION

Preeclampsia is associated with high risk of adverse obstetric outcome, the severity of which depends upon the severity of preeclampsia. The maternal, fetal and neonatal outcome can be improved with adequate antenatal care facilities to the pregnant mothers.

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