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Research Article

**A CROSS-SECTIONAL RESEARCH TO ASSESS THE
OCCURRENCE OF FETAL, MATERNAL AND NEONATAL
COMPLICATIONS IN PREECLAMPSIA**¹Dr Rabia Khalid, ²Dr. Aisha Naveed, ³Dr. Ayesha Ejaz¹Services Hospital Lahore, ²Nishtar Medical College, ³Sir Ganga Ram Hospital Lahore.**Article Received:** April 2019**Accepted:** May 2019**Published:** June 2019**Abstract:**

Objective: The objective of this research was to assess the occurrence of neonatal, fetal and maternal complications in preeclampsia.

Patient and Method: We completed this cross-sectional research at Services Hospital, Lahore from February to July 2018 on a total of 200 patients. These patients were hospitalized due to preeclampsia carrying singleton fetus with a gestational age of more than twenty weeks. We did not include patients having medical complications before getting pregnant such as renal impairment, diabetes mellitus and hypertension through examination and history. We also excluded patients diagnosed with fetal congenital anomalies as observed through ultrasonography.

Results: The mean age of Group – I was (25.65 ± 2.38) years and for Group – II (25 ± 2.76) years. For unbooking status 76 women (60%) were un-booked in Group – I and 60 women (82%) were un-booked in Group – II. of group-2 women were un-booked. Imminent eclampsia was reported in Group – I & II respectively as 0.78% and 33%. In terms of eclampsia in both groups Group – I and II presented respective proportions of 0.78% and 10%.

Conclusion: Preeclampsia has an association with adverse obstetric outcomes and higher risks depending on the severity of preeclampsia. The neonatal, fetal and maternal outcomes can be made better with extending better antenatal care facilities among pregnant women.

Keywords: Obstetric, Preeclampsia, Risk Factor, Booking Status, Maternal, Neonatal and Fetal.

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INTRODUCTION:

Preeclampsia (PE) is a common pregnancy-related complication with a high risk of perinatal and maternal morbidity especially in the underdeveloped countries [1]. This disorder of vasospasm and vascular endothelial dysfunction which occurs after twenty gestational weeks and may remain from four to six postpartum weeks.

According to the clinical definition of proteinuria and hypertension, it is a big challenge for obstetricians due to non-availability of effective treatment modalities for its possible prevention. It is difficult for pregnant women to main antenatal care due to possible risks of early birth and continuation of pregnancy [2]. Its maternal complications encompass placental abruption, eclampsia, HELLP syndrome, acute renal damage, pulmonary oedema and cerebrovascular accidents. There is a direct association of preeclampsia Fetal complications and gestational age with maternal disease severity which includes increased chances of preterm delivery, placental abruption and intrauterine growth restriction.

Perinatal risk of death is 16% among those infants who born to a hypertensive mother. The morbidity is higher along with the higher level of requirement of neonatal care 36% [3, 4]. Higher neonatal and maternal morbidity has an association with severe preeclampsia especially in countries like Pakistan where antenatal care facilities are difficult to find and availability for mothers is difficult. It is the need of the hour to highlight the impact of the disease on neonate, fetus and mother especially in the underdeveloped countries. Higher disease incidence also requires better treatment and prevention strategies especially in the underdeveloped countries. Proper implementation requires a huge burden of cost with critical mother, intrauterine growth babies and newborns with long-term issues. Therefore, our objective of this research was to assess the occurrence of neonatal, fetal and maternal complications in preeclampsia.

SUBJECT AND METHODS:

We completed this cross-sectional research at Services Hospital, Lahore from February to July 2018 on a total of 200 patients. These patients were hospitalized due to preeclampsia carrying singleton fetus with a gestational age of more than twenty weeks. We did not include patients having medical complications before getting pregnant such as renal impairment, diabetes mellitus and hypertension through examination and history. We also excluded patients diagnosed with

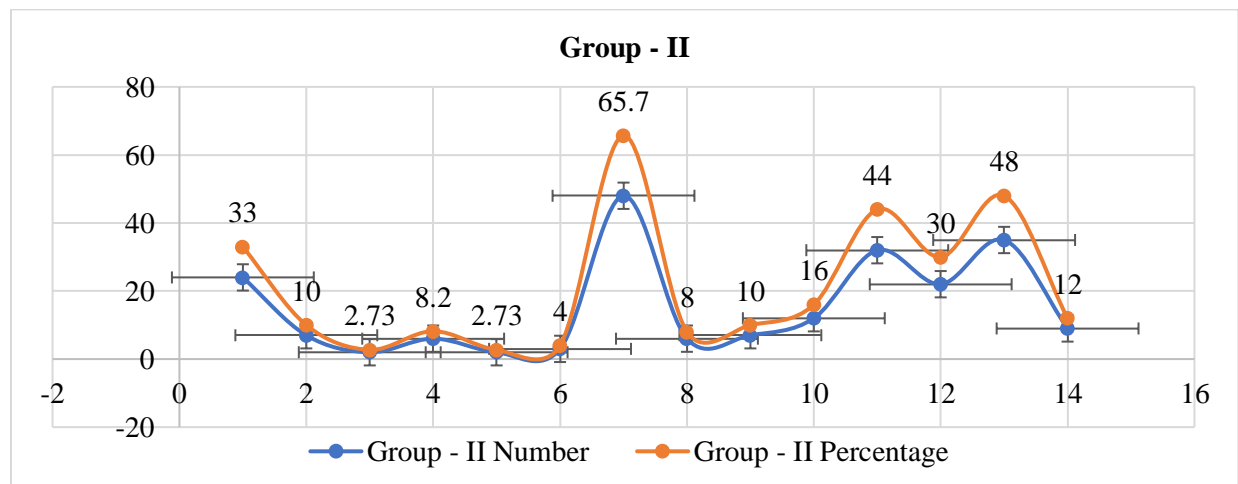
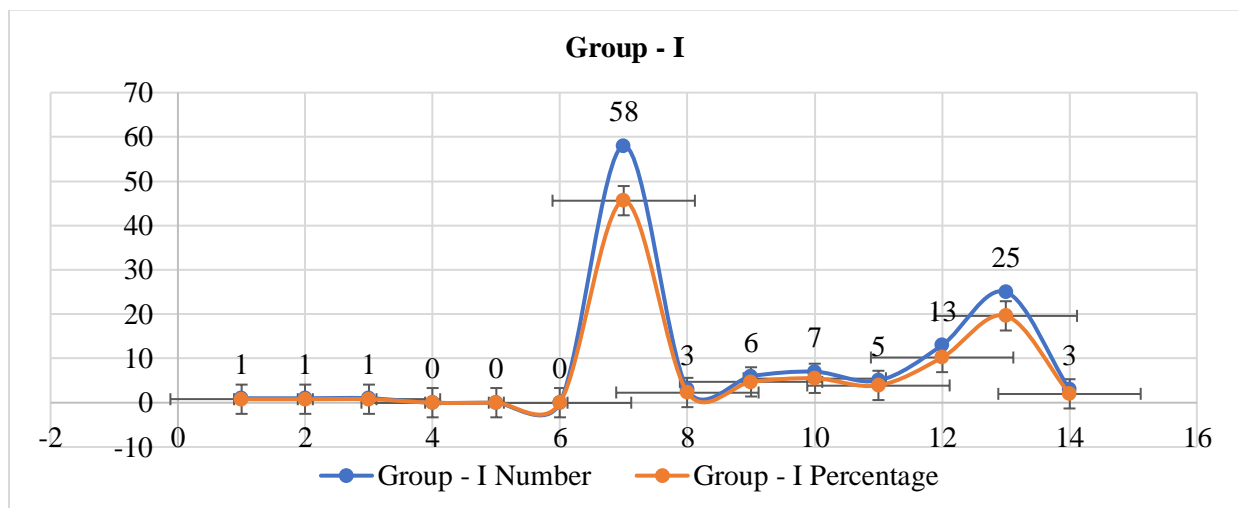
fetal congenital anomalies as observed through ultrasonography. Preeclampsia refers to the development of hyper proteinuria and hypertension which develops after 20th pregnancy week with BP as ($\geq 140/90$ mmHg taken at two different intervals), proteinuria (> 300 mg / 24 hours or $\geq 2+$ dipstick protein level at an interval of four hours through urine sampling). Preeclampsia is severe in case of blood pressure measurement systolic BP (≥ 160 mmHg) or diastolic blood pressure (≥ 110 mmHg), $\geq 3+$ dipstick protein measured in two samples of urine, right upper quadrant pain, epigastric pain, blurred vision, abnormal liver function, cerebral disturbances, cyanosis, pulmonary edema, low platelets, fetal growth restriction and oliguria (< 500 ml) in twenty four hours. A specially designed Performa was used to document information about maternal age, parity, booking status, imminent eclampsia, maternal complications, severe headache, vision blurring, epigastric pain, hyperreflexia, right hypochondrial pain, presence of seizures, pulmonary edema, abruption placenta, HELLP syndrome, cerebrovascular accidents, postpartum hemorrhage, acute renal failure, delivery mode, maternal death and instrumental vaginal delivery. Neonatal and Fetal observations include intrauterine growth restriction, low birth weight, preterm delivery (before 37 gestational weeks), intrauterine fetal death and early neonatal death. Keeping in view the onset of severity, the patients were divided into two subgroups Group I and II respectively consisting of mild and severe preeclampsia patients. Both groups were also compared for obstetric outcomes (P-Value < 0.05).

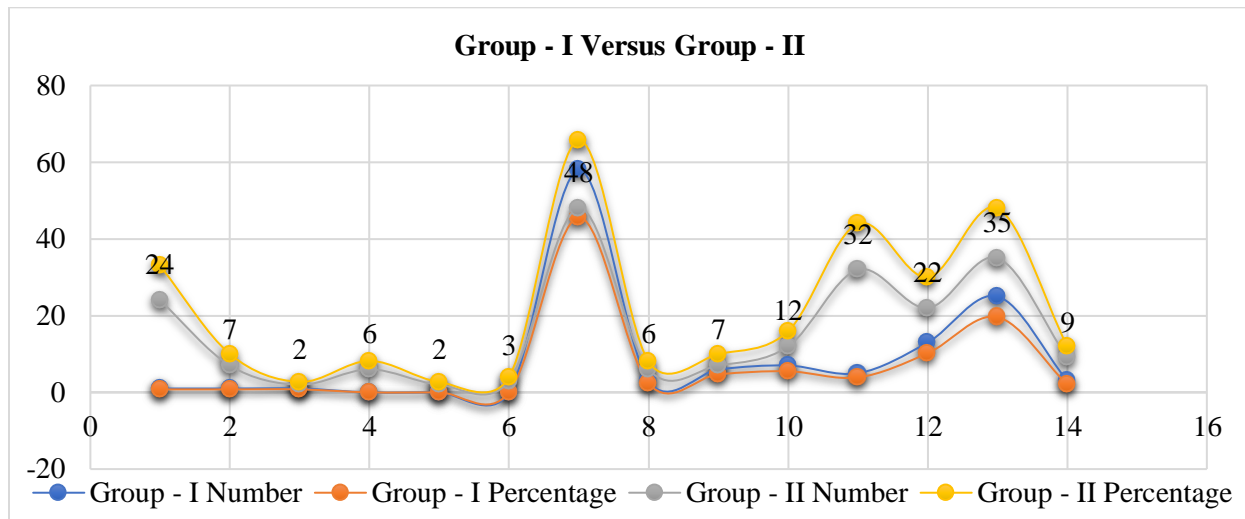
RESULTS

The mean age of Group – I was (25.65 ± 2.38) years and for Group – II (25 ± 2.76) years. For unbooking status 76 women (60%) were un-booked in Group – I and 60 women (82%) were un-booked in Group – II. of group-2 women were un-booked. Imminent eclampsia was reported in Group – I & II respectively as 0.78% and 33%. In terms of eclampsia in both groups Group – I and II presented respective proportions of 0.78% and 10%. Group-wise stratification of variables was such that we found Imminent eclampsia (1 vs 24), Eclampsia (1 vs 7), Abruption placenta (1 vs 2), Pulmonary edema (0 vs 6), Acute renal damage (0 vs 2), HELLP syndrome (0 vs 3), Cesarean section (58 vs 48), Instrumental delivery (3 vs 6), PPH (6 vs 7), IUGR (7 vs 12), prematurity (5 vs 32), Low birth weight (13 vs 22), NICU admission (25 vs 35) and Early neonatal death (3 vs 9) in respectively (Group – I vs Group – II).

Table: Group Wise Comparison of Variables (Number and Percentage)

Variable	Group – I		Group – II		P-Value
	Number	Percentage	Number	Percentage	
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	0	6	8.2	0.004
Acute renal damage	0	0	2	2.73	0.29
HELLP syndrome	0	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	< 0.00001
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 has a significant correlation between maternal and fetal mortality and morbidity [5]. Among these total patients, un-booked cases were 68% with most of the patients in the category of severe preeclampsia which faced scarcity of antenatal care. This is a reason of mortality and morbidity from preeclampsia which is higher in the underdeveloped countries [6].

The primary objective of the preeclampsia women management is to safeguard the mother's safety and fetus safety followed by healthy baby's deliveries [3]. Most of the preeclampsia patients (60%) in Group – I was un-booked; whereas, the ratio of such cases in Group – II was (86%). Ahmad also presented similar outcomes [7]. Certain maternal complications may also increase which include eclampsia, imminent eclampsia, pulmonary oedema, abruption placenta, HELLP syndrome and acute renal damage among severe preeclampsia patients. PPH, cesarean section and instrumental delivery are also frequent in severe arm disease [4, 7 – 10]. Our outcomes also correlate with many other national and international literary evidence. There were two maternal deaths in the group of severe preeclampsia which were un-booked and primigravida who belonged to the rural background. Among these two patients, one had eclampsia along

with massive pulmonary oedema; whereas, the other patients presented intracranial bleed. Severe preeclampsia features women with preterm or needs preterm delivery leads to prematurity and neonatal problems. Severe preeclampsia also includes a significant risk factor for the demise of intrauterine fetal. Moreover, the common cause of IUGR is preeclampsia and low birthweight infants in the infants of non-anomalous groups [11]. The patients with the severe disease also present risks of IUFD, IUGR, LBW babies, premature delivery, early neonatal death and NICU admission. Placental abruption resulted in IUFD in two severe preeclampsia patients and one in the case in the group of mild preeclampsia which is inconsistent with other research studies [1, 6, 9, 12]. The referrals cases of mild and severe preeclampsia were not that much in the tertiary healthcare centers. More research work will improve the analysis and evaluation of long-term neonatal complications for various treatment modalities.

CONCLUSION

Preeclampsia has an association with adverse obstetric outcomes and higher risks depending on the severity of preeclampsia. The neonatal, fetal and maternal outcomes can be made better with extending better antenatal care facilities among pregnant women.

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