

# Pre-Eclampsia and Pregnancy Outcome: A Population Based Case Control Study in Karachi Pakistan

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## ABSTRACT

**Objective:** To determine the pregnancy outcomes in women presented with severe pre-eclampsia in Karachi Pakistan.

**Study Design:** Case control/Prospective study.

**Place and Duration of Study:** This study was conducted at the Medicare Cardiac & General Hospital Karachi during from July 2016 to June 2018.

**Materials and Methods:** One hundred and ten patients with ages 18 to 45 years presented with pre-eclampsia were included in this study. Patients detailed demographic including age, parity, gestational age, and body mass index were recorded after taking written consent. Patients complete blood picture was examined. Complications associated with preeclampsia were examined.

**Results:** Twenty-two (20%) were ages <20 years, 48 (43.64%) were ages 20 to 30 years, 36 (32.72%) were ages 31 to 40 years and 4 (3.64%) were ages above 40 years. 42 (38.18%) were prim gravida while 68 (61.82%) were multigravida. Mean gestational age was 33.45±4.68 weeks. HELLP syndrome found in 20 (18.18%) patients, 10 (9.09%) patients had eclampsia, and 14 (14.55%) patients had placental abruption, coagulopathy found in 3 (2.73%) patients, 2 (1.82%) patients developed acute renal failure and 2 (1.82%) patients were died.

**Conclusion:** Pre-eclampsia is highly associated with major maternal complications such as HELLP syndrome, eclampsia, placental abruption and maternal mortality.

**Key Words:** Pre-eclampsia, HELLP Syndrome, Placental Abruption, Eclampsia, Mortality

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## INTRODUCTION

Preeclampsia, a moderately basic hypertensive issue during pregnancy, shows dynamically and regularly offers ascend to genuine maternal and perinatal difficulties. While the etiology of preeclampsia isn't clear, it is described by vasospasm and endothelial enactment, with hypertension and proteinuria, after week 20 of pregnancy.<sup>1</sup> The occurrence of preeclampsia is variable, since numerous examinations have utilized estimations dependent on emergency clinic tests - a circumstance that could clarify the moderately every

now and again detailed figure of up to 5-10%, contingent upon the medicinal services levels of the emergency clinics in which the investigations are made. It has been assessed that 7% of every single pregnant lady create preeclampsia<sup>2</sup>, however the rate could be higher in less ideal financial settings, and in nations with a higher predominance of cardiovascular malady.<sup>3</sup> Albeit little estimation has been made in Spain, the current information point to a rate of 1-2%.<sup>4</sup>

Five percent of all instances of preeclampsia thusly at last advancement toward eclampsia<sup>5</sup> and in up to 19% of the cases the condition can show as HELLP disorder, which is related to expanded horribleness mortality.<sup>6</sup> The adverse maternal results in preeclampsia are on a very basic level owing to brokenness of the focal sensory system, liver or kidneys (hemorrhagic stroke, liver crack or intense renal disappointment), and to draining related to thrombocytopenia. Preeclampsia-eclampsia is one of the three most basic reasons for mortality in pregnant ladies, together with thromboembolic malady and baby blues discharge.<sup>7</sup>

Despite the way that few investigations have been led focusing on the distinguishing proof of maternal demise related dangers factors, concentrates carefully centering patients with preeclampsia/eclampsia are uncommon.<sup>8,9</sup>

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Thinking about the as yet existing inconceivability of preeclampsia anticipation (most of clinical articles flopped in showing the viability of various treatments, for example, anti-inflammatory medicine, calcium and different modalities), we felt it was imperative to distinguish, among patients with serious preeclampsia/eclampsia, the ones conveying the more serious hazard for maternal deaths.<sup>10</sup>

**MATERIALS AND METHODS**

This prospective/observational study was conducted at Medicare Cardiac & General Hospital Karachi from 1<sup>st</sup> July 2016 to 30<sup>th</sup> June 2018. A total of 110 patients with ages 18 to 45 years presented with pre-eclampsia were included in this study. Pre-eclampsia was defined as systolic blood pressure >160 mmHg and diastolic BP >110 mmHg and having significant proteinuria. Patients detailed demographic including age, parity, gestational age, and body mass index were recorded after taking written consent. Patients with cardiovascular disease, patients with chronic renal failure and patients with other abdominal surgeries were excluded from this study.

Patients complete blood picture was examined. Laboratory investigations were sent after assessment. Patients were managed as indoor patients according to unit protocols and were observed for eclampsia, abruption placentae, HELLP syndrome, Global complications such as heart failure, coagulopathy, renal and maternal mortality. In patients who developed these complications, pregnancy was terminated and the condition managed. All the data was analyzed by SPSS 24.

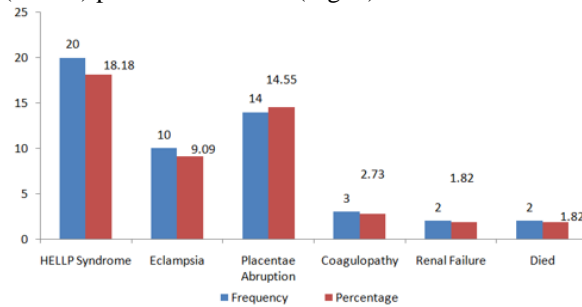
**RESULTS**

Twenty-two (20%) were ages <20 years, 48 (43.64%) were ages 20 to 30 years, 36 (32.72%) were ages 31 to 40 years and 4 (3.64%) were ages above 40 years. 42 (38.18%) were primigravida while 68 (61.82%) were multigravida. Mean gestational age was 33.45±4.68 weeks. Mean body mass index (BMI) was 20.18±3.86 kg/m<sup>2</sup> (Table 1).

**Table No.1: Characteristics of all the patients**

Characteristics	No.	%
<b>Age (years)</b>		
<20	22	20
20 to 30	48	43.64
31 to 40	36	32.72
>40	4	3.64
<b>Gravidity</b>		
Primigravida	42	38.18
Multigravida	68	61.82
Mean gestational age	33.45±4.68	
Mean BMI (Kg/m)	20.18±3.86	

According to the complications, HELLP syndrome found in 20 (18.18%) patients, 10 (9.09%) patients had eclampsia, and 14 (14.55%) patients had placental abruption, coagulopathy found in 3 (2.73%) patients, 2 (1.82%) patients developed acute renal failure and 2 (1.82%) patients were died (Fig. 1).



**Figure No.1: Complications found in all the patients**

**DISCUSSION**

Pre-eclampsia is a common gynecological and obstetrical disorder associated with high rate of morbidity and mortality.<sup>11</sup> We conducted this study to examine the major maternal complications associated with pre-eclampsia. In this regard we included 110 patients presented with pre-eclampsia. Majority of patients 43.64% were ages 20 to 30 years followed by 32.72% had ages 30 to 40 years. These results showed similarity to many of previous studies in which the average age of patients was 35 years.<sup>12,13</sup>

In the present study, 42 (38.18%) were primigravida while 68 (61.82%) were multigravida. Mean gestational age was 33.45±4.68 weeks. Mean body mass index (BMI) was 20.18±3.86 kg/m<sup>2</sup>. A study conducted by Curiel-Balsera et al<sup>14</sup> reported that in pre-eclamptic patients the mean gestational age was 32±4 weeks. Seid et al<sup>15</sup> reported that 54% patients were primigravida while 46% were multigravida.

In present study, overall complications found in 51 (46.36%). Among all the complications the most frequent complication was HELLP syndrome and found in 20 (18.18%) patients followed by placental abruption in 14.55%, eclampsia in 9.09%, coagulopathy in 2.73%, and acute renal failure in 1.82% patients. A study conducted by Nankali et al<sup>15</sup> reported that 22 cases (6.3 %) who had suffered from eclamptic seizures, 1 (0.3 %) patient was demonstrated to have HELLP syndrome. Placental abruption was obstetric complication in 7.7 % (27 cases). Ngwenya<sup>16</sup> reported the most common complication in pre-eclamptic patients was HELLP syndrome 9.1% out of 118 patients.

A study conducted by Gao et al<sup>17</sup> regarding outcomes of pre-eclampsia, in their study the eclampsia was the most frequent complication found in 21% followed by renal failure, abruption and HELLP syndrome.

This study showed that 2 (1.82%) patients were died and 1 of them associated with acute renal failure and 1

had HELLP syndrome. These results were comparable to some previous studies.<sup>18-20</sup>

## CONCLUSION

Pre-eclampsia is highly associated with major maternal complications and these complications has major contribution to increase maternal and fetal mortality. We concluded from this study that HELLP syndrome was the most frequent complication followed by eclampsia, abruption and coagulopathy. The mortality rate was 1.82%. Also we concluded that proper and early management can helps to reduce the morbidity and mortality.

### Author's Contribution:

Concept & Design of Study: Sadia Rashid  
 Drafting: Safia Izhar, Shazia Kadri  
 Data Analysis: Saira Ghafoor, Asma Abdullah  
 Revisiting Critically: Sadia Rashid, Safia Izhar  
 Final Approval of version: Sadia Rashid

**Conflict of Interest:** The study has no conflict of interest to declare by any author.

## REFERENCES

- Bhattacharya S, Campbell DM. The incidence of severe complications of preeclampsia. *Hypertens Pregnancy* 2005; 24: 181-90.
- Kaaja R, Kinnunen T, Luoto R. Regional differences in the prevalence of pre-eclampsia in relation to the risk factors for coronary artery disease in women in Finland. *Eur Heart J* 2005; 26: 44-50.
- Gratacós E, Cabero L. Diagnóstico de preeclampsia y eclampsia. *Jano*2000; 58: 61-3.
- Pregnancy-induced hypertension. Professional guide to diseases, 8th ed., Springhouse: Lippincott Williams & Wilkins, 2005.
- Abroug F, Boujdaria F, Nouira S, Abroug S, Souissi M, Najjar MF, et al. HELLP syndrome: incidence and maternal-fetal outcome. A prospective study. *Intensive Care Med* 1992;18: 274-7.
- RubioLorente AM, González López AB, González Mirasol E, González de Merlo G. Morbimortalidad maternity fetal enpacientes con preeclampsia grave. *Prog ObstetGinecol* 2011; 54: 4-8.
- Agida ET, Adeka BI, Jibril KA. Pregnancy outcome in eclamptic at the University of Abuja Teaching Hospital, Gwagwalada, Abuja: a 3year review. *Niger J Clin Pract* 2010;13:394-8.
- Ajah LO, Ozonu NC, Ezeonu PO, Lawani LO, Obuna JA, Onwe EO. The fetomaternal outcome of preeclampsia with severe features and eclampsia in Abakaliki, South-East Nigeria. *J Clin Diagn Res* 2016;10(9):QC18-21.
- Kinay T, Kucuk C, Kayikcioglu F, Karakaya J. Severe preeclampsia versus HELLP syndrome: maternal and perinatal outcomes at <34 and ≥34 weeks' gestation. *Balkan Med J*2015;32(4):359-63.
- Anath CV, Lavery JA, Friedman AM, Wapner RJ, Wright JD. Serious maternal complications in relation to severe pre-eclampsia: a retrospective cohort study of the impact of hospital volume. *BJOG* 2016; 21.
- Preeclampsia: A decade of perspective, building a global call to action. Preeclampsia Foundation, Melbourne, Florida, 2010.
- Kassie GM, Negussie D, Ahmed JH. Maternal outcomes of magnesium sulphate and diazepam use in women with severe pre-eclampsia and eclampsia in Ethiopia. *Pharm Pract* 2014; 12: 400.
- Sultana A, Aparna J. Risk factors for pre-eclampsia and its perinatal outcome. *Ann Biol Res* 2013;4:1-5
- Curiel-Balsera E, Prieto-Palomino S, Muñoz-Bono J, Ruiz de Elvira MJ, Galeas JL, Quesada García G. Analysis of maternal morbidity and mortality among patients admitted to Obstetric Intensive Care with severe preeclampsia, eclampsia or HELLP syndrome. *Medine* 2011;35(8): 478-83.
- Nankali A, Malek-Khosravi SH, Zangeneh M, Rezaei M, Hemati Z, Kohzadi M. Maternal complications associated with severe preeclampsia. *J Obstet Gynaecol Ind* 2013;63(2):112-5.
- Ngwenya S. Severe preeclampsia and eclampsia: incidence, complications, and perinatal outcomes at a low-resource setting, Mpilo Central Hospital, Bulawayo, Zimbabwe. *Int J Womens Health* 2017;9:353-7.
- Gao XJ, Ye CH, Zhao HR, Chen C. Preeclampsia related investigative parameters and its association with maternal outcome. *Biomed Res* 2017; 28(7).
- Gupta T, Gupta N, Jain J, Gupta S, Bhatia P, Bagla J. Maternal and perinatal outcome in patients with severe preeclampsia/eclampsia with and without help syndrome. *J Universal Coll Med Sci* 2013;1: 7-12.
- Bhutta ZA, Hafeez A, Rizvi A, et al. Reproductive, maternal, newborn, and child health in Pakistan: challenges and opportunities. *Lancet* 2013, 381: 2207-18.
- Un Nisa S, Shaikh AA, Kumar R. Maternal and fetal outcomes of pregnancy-related hypertensive disorders in a tertiary care hospital in Sukkur, Pakistan. *Cureus* 2019;11(8): e5507.