Prevalence, Characteristics, Complications, and Perinatal Outcomes of non-severe versus severe feature preeclampsia and HELLP

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Problem statement

Hypertension in pregnancy is the common complications during pregnancy, and also a leading cause of maternal morbidity and mortality such as cardiovascular and cerebrovascular diseases, liver and kidney failure, placental abruption, disseminated intravascular coagulation and HELLP syndrome. The worldwide prevalence of hypertension in pregnancy is approximately 2 to 10% which vary according to the difference of the population characteristics, definitions, and criteria of diagnosis. In Thailand, the prevalence of preeclampsia was 1.9% and Srinagarind Hospital reported 0.96% severe preeclampsia. The primary objective of this study was to determine the prevalence of preeclampsia (PE) among pregnant women, and also evaluated the characteristics, maternal complications and perinatal outcomes between non-severe versus severe feature PE and HELLP.

Methods

A retrospective descriptive study was conducted at Srinagarind Hospital, Khon Kaen University, Thailand. A total of 213 pregnant women diagnosed PE according to ACOG definition from January to December 2016 who delivered at Srinagarind Hospital were enrolled. The prevalence of PE was estimated and reported in percentage. Various characteristics were compared between non-severe versus severe feature PE with HELLP groups using Chi-square test and Student t-test.

Table: Characteristics of the pregnant women at baseline

Characteristics	Number (%)
Mean age, SD (years)	29.0 ± 6.1
Nulliparous	106 (49.8)
Multiple pregnancy	11 (5.2)
History of previous preeclampsia	11 (5.2)
Family history of HT in first degree relative	47 (22.6)

Table: Diagnosis and delivery characteristics of the pregnant women

Characteristics	Number (%)
Diagnosis	
PE without severe feature	107 (50.2)
PE with severe feature	90 (42.3)
HELLP	16 (7.5)
Gestational age at diagnosis	
Early-onset PE (GA < 34)	58 (27.2)
Late-onset PE (GA ≥ 34)	155 (72.8)
Gestational age at delivery	
GA < 28 weeks	16 (7.5)
GA 28 - < 34 weeks	30 (14.1)
GA 34 - < 37 weeks	51 (23.9)
GA ≥ 37 weeks	116 (54.5)

Results

From a total of 11,199 deliveries during the period of study, 213 preeclamptic women were identified (overall prevalence of PE was 1.9 per 1000 deliveries); 107 women (50.2%, 0.96 per 1000 deliveries) were diagnosed non-severe feature PE, 90 women (42.3%, 0.9 per 1000 deliveries) were diagnosed severe feature PE and 16 women (7.5%; 0.01 per 1000 deliveries) were diagnosed HELLP syndrome. Fifty-eight women (27.2%) were diagnosed at gestational age before 34 weeks; early-onset PE, and ninety-seven women (45.5%) delivered at gestational age before 37 weeks.

Twenty-one women (9.9%) had postpartum hemorrhage; 11 women (10.3%) among non-severe feature PE and 10 women (9.4%) in severe feature PE. Placental abruption (3 women; 1.4%) and heart failure (1 women; 0.4%) had only among severe feature PE group. Low birth weight (35.1% versus 74.3%, $p < 0.001$), birth asphyxia (4.4% versus 18.2%, $p = 0.001$), NICU admission (7.0% versus 30.9%, $p < 0.001$) and neonatal resuscitation (15.8% versus 42.7%, $p < 0.001$). Stillbirth (3 women; 1.4%) had only among severe feature PE group and intrapartum death was more among severe feature PE group but without statistical significance (2.6% versus 6.4%, $p = 0.190$).

Table: Comparison of maternal and neonatal complications

Characteristics	Non-severe PE (N=107)	Severe PE and HELLP (N=106)	Odds with 95%CI	P
PPH	11 (10.3)	10 (9.4)	0.91 (0.37-2.24)	0.836
Blood transfusion	1 (0.9%)	12 (11.3%)	13.53 (1.73 - 106.04)	0.013
Placental abruption	0 (0%)	3 (2.8%)	-	-
Heart failure	0 (0%)	1 (0.9%)	-	-
ICU admission	1 (0.9%)	7 (6.6%)	7.49 (0.91 - 62.01)	0.062
Low birth weight	40 (35.1%)	81 (74.3%)	5.35 (3.01 - 9.53)	<0.001
Birth asphyxia	5 (4.4%)	20 (18.2%)	4.84 (1.75 - 13.42)	0.001
NICU admission	8 (7.0%)	34 (30.9%)	5.93 (2.60 - 13.52)	<0.001
Neonatal resuscitation	18 (15.8%)	47 (42.7%)	3.98 (2.12 - 7.47)	<0.001
Stillbirth	0 (0%)	3 (2.7%)	-	-
Intrapartum death	3 (2.6%)	7 (6.4%)	2.51 (0.63 - 9.98)	0.190

Conclusions

The prevalence of preeclampsia was not difference and severe feature PE with HELLP was associated with higher rates of maternal severe morbidity and perinatal outcomes.

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