Hypertension and Pregnancy in Karbala Maternity Hospital

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Abstract

B ackground: Hypertension complicates 5-7% of all pregnancies. Preeclampsia characterized by development of hypertension, proteinuria and multisystem involvement after 20 weeks of pregnancy in a previously normal female and disappear after peurperium and it is responsible for substantial maternal and fetal morbidity. **Objective:** the purpose of this study was to know the complications of hypertension in female during pregnancy and postpartum period, the method of termination of pregnancy, fetal and neonatal outcome of female with hypertension in pregnancy.

Methods: this is a prospective study involve 75 pregnant women with hypertension admitted to Karbala maternity hospital, we monitored their pregnancies and recorded the development of complications.

Results: eclampsia developed in 25.33% of them, HEELP syndrome developed in 9.33% and intrauterine fetal death occur in 6.66% and no maternal mortality occurring during this period, intrauterine fetal death occur in 6.66% of them and 32% of them delivered vaginally. **Conclusion:** lower incidence of eclampsia, maternal death, intrauterine fetal death and other complications due to preeclampsia due to good monitoring and the use of prophylactic magnesium sulphate in severe cases.

Introduction

Hypertensive disorders are the most common medical complications of pregnancy and are important cause of maternal and perinatal morbidity and mortality¹. Hypertension was defined as systolic blood pressure of 140 mm.Hg or greater and diastolic blood pressure of 90 mm.Hg or greater on at least two readings 4 hour apart¹. The preeclampsia can cause a lot of maternal complications such as eclampsia, DIC, renal failure, hepatic failure and increase maternal mortality rate, and it is the major cause of the preterm birth. The preterm delivery is associated with immediate neonatal morbidity and has been linked to remote cardiovascular and metabolic disease in the newborn 2,3,4,5 .

Eclampsia; occurrence of seizure in women with preeclampsia. HEELP syndrome may occur in 2-12% of women with preeclampsia and include development of heamolysis, elevated liver enzyme and low platelet count.

Materials and methods

This study is a prospective study carried in Karbala maternity hospital in the period between July 2012 to May 2013. (75) Female with hypertension were included in the study. Information was obtained for variables such as age, parity and weeks of gestation, the presence of symptoms like headache, nausea, vomiting, urine output and fetal movement were recorded. The blood pressure was measured and we regard the female to have sever hypertension if the diastolic blood pressure equal to or greater than 110 mm.Hg. and checking of fetal heart rate. The investigations done to these women include albumin in urine, complete blood count, liver function test and renal function test. After admission to the hospital for follow up, antihypertensive medication that used was methyl dopa, hydralazine and nefidipine (according to their blood pressure). Monitoring of these women done by;

- 1- history of headache, nausea, vomiting, urine output and fetal movement.
- 2- Frequent measurement of blood pressure, urine output, and fetal wellbeing.

3- Investigations like albumin in urine, complete blood count, liver function test and renal function test.

Fetal monitoring by fetal movement, daily CTG, twice weekly biophysical profile and weekly Doppler study of umbilical blood vessels. These pregnant women were followed up till the time of delivery (we start the study with 100 female with hypertension, but 25 female not complete the follow up). Development of maternal complications like eclampsia, antipartum hemorrhage, postpartum hemorrhage, HEELP syndrome, admission for intensive monitoring and maternal death were recorded till 2 weeks post delivery. Fetal complications like intrauterine fetal death, preterm delivery, APGAR score, admission to the neonatal care unite or any neonatal complications were recorded. Mode of delivery of theses female vaginal, caesarean (the indication of it) or assisted delivery, complications during labour or in the 2 weeks postpartum period were recorded. All these data was collected for each women and statistical analysis was carried out using SPSS version 10.

Fig.	1.	characteristics	of	the	po	pulation	studied
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Results

The mean age of the patient was 29.6 years and the range was 15-43 years. The mean weeks of gestation was 37, 17 (22.66%) were preterm delivery and 58 (77.33%) had term delivered baby. The mean parity was 2.6, 57 (76%) were multiparous and 18 (24%) of them were primiparous. Diastolic blood pressure was equal to or less than 110 mmHg.in 34 (45.33) and more than 110 mmHg.in 41(54.66%) of cases. The headache was present in 53 (70.66%) of cases. Visual disturbance was present in 42 (56%) of them. Epigastric pain was present in 36 (48%) of them. Regarding the use of antihypertensive treatment. 56 (74, 66)were using antihypertensive treatment before admission and most of them were using methyldopa, other treatment like nifedipine, hydralasine. Non reassuring fetal wellbeing is present in 16 (21.33%) of them. Significant protein in urine (more than +++) was present in 37 (49.33%). Elevated liver enzyme was present in 49 (65.33%) of them.

1 15. 1. characteristics of the population studied						
Mean Age (years)	29.6		Range 15- 43 years			
Mean Week of gestation	37		17(22.66%) preterm			
			58(77.33) term			
Parity mean	2.6		57(76%) multiparous			
			18(24%)primiparous			
Diastolic blood pressure	≤110	34	45.33%			
	>110	41	54.66%			
Head ache	53		70.66%			
Visual disturbance	42		56%			
Epigastric pain	36		48%			
Use of antihypertensive drug	56		74.66%			
Non reassuring fetal well being	16		21.33%			
testing						
Significant Protein in urine	37		49.33%			
Elevated LFT	49		65.33%			

Fig. 2. development of complications

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Complications	Number of cases	Percent
Eclampsia	19	25.33%
Antipartum hemorrhage	8	10.66%
Postpartum hemorrhage	3	4%
HELLP syndrome	7	9.33%
Intrauterine fetal death	5	6.66%
Maternal death	0	

Eclampsia developed in 19 (25.33%) of cases and most of them developed fit after discharge on their responsibilities and returned back with fit . Antipartum hemorrhage developed in 8 (10.66%) . Postpartum hemorrhage developed in 3 (4%). HELLP syndrome developed in 7 (9.33%) of them. Intrauterine fetal death occur in 5 (6.66%) of them . No mother died from preeclampsia during the period of the study. Muna Kasim Mahmood

24 (32%) of them delivered vaginally. Deliveries by caesarean section indicated in 51 (68%) of them, 21 (41.17%) due to sever and uncontrolled hypertension or development of complications of preeclampsia and 30(58.82) due to causes not related to preeclampsia. No case needed delivery by instrumental deliveries.

Fig.3.	methods	of t	termination	n of	pregnancy	

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Mode of delivery	Number of cases	Percent			
Vaginal delivery	24	32%			
Caesarean section	51;	68%;			
	Due to preeclampsia –21	(41.17%)			
	Due to other causes 30	(58.82%)			
Instrumental delivery		0			
Fig. 4 fetal and neonatal outcome of preeclampsia					

1.8. If form and hooman outcome of processing sin				
	Number	Percent		
Preterm delivery	17	22.66%		
Intrauterine fetal death	5	6.66%		
Neonatal care unite admission	2	2.66%		
Macrosomia	1	1.33%		
Term baby	58	77.33%		

Preterm delivery occur in 17 (22.66%) of them. Intrauterine fetal death occur in 5 (6.66%) of them. Neonatal care unite admission is needed in 2 (2.66%) most of them had gestational age more than 35 weeks and discharge within few days of admission and no early neonatal death was recorded . macrosomia occur in 1 (1.33%) of them while term delivered baby occur in 58 (77.33%).

Discussion

We performed our research on 75 female with preeclampsia who were treated at Obstetrics& Gynecology Hospital in Karbala city. Over a period of 11 months; from July 2012, through May 2013, pregnancies with preeclampsia were followed up.

The mean age for the studied group was 29.6 year with a range between 15-43, while the mean age for patient with preeclampsia was 25.8 + 5.8 years in another study was ⁷. Mean gestational age at the time of delivery was 37 weeks in our study while it was 34.8 in another study⁷.

Head ache is the most common symptom occurring in 70.66%(53) of the studied group while it was present in 51.39% in another study⁶. Visual disturbance occur in 56%(42) of the studied group while it was present in 5.5% in another study⁶. Epigastric pain was presents in 48%(36) of the studied group while it was presents in 27.77% in another study⁶. Eclampsia occur in 25.33%(19) of the studied group while it occurred in 40.28%, 52% and 0% in another studies^{6,7,10}.

Significant protein in urine occur in 49.33%(37) of the studied group while it was present in 25% in another study⁶. HELLP syndrome occur in 9.77% (7) of the studied group while it occurred in 6.94% in one study⁶ and 2% in another study ¹⁰. Between 4 and patients 8.9% of with preeclampsia_eclampsia develop HELLP syndrome 17,18,19.

The incidence of HELLP syndrome among women with severe pre-eclampsia and eclampsia in one study was 16%.²⁰

Liver function tests were elevated in (65.33%) 49 of the patients, compared with (75%) in the other study ⁶. No

Maternal mortality was recorded in the studied group , compared with (5.5%)in one study⁵ and 6.1% in another study⁷.

Antepartum Hemorrhage (abruption) occur in 10% (8) of pregnancies in our studied female, while it was present in 4.9% in another study⁷.

Regarding the mode of delivery 32% of female delivered vaginally in our study while vaginal delivery occur in 22% of female with preeclampsia in another study⁷. Caesarean delivery occur in 68% of female with preeclampsia in our study while it was 28% in female with preeclampsia in one study ⁷ and 70% in another study¹⁰. In one study the mode of delivery was (cesarean in 53 patients (80%) and vaginal in 13 (20%) patients. Indications for cesarean section included was non reassuring fetal heart rate pattern (26%), section previous cesarean (24%),malpresentation (21%), unfavorable cervix (17%), maternal indications (6%), and other indications (6%)).²⁰

Preterm delivery occurred in 17 case (22.66%) in our study, while it was $(38.89\%)^{6}$,22.22% ⁹ and 51% in another studies Intrauterine fetal death occur in 6.66% (5) compared to 24%, 31.94% and 3% in another studies^{6,7,10}. Severe preeclampsia represents significant risk factor for intrauterine fetal demise, with estimated stillbirth rate of 21 per 1000¹². However, in cases of mild preeclampsia, the risk of fetal demise is 9 per 1000^{12} . Hypertensive disorders also carry a risk for the baby. In the most recent UK perinatal mortality report, 1 in 20 (5%) stillbirths in infants without congenital abnormality occurred in women with preeclampsia. The contribution of pre-eclampsia to the overall preterm birth rate is substantial;1 in 250 (0.4%) women in their first pregnancy will give birth before 34 weeks as a consequence of pre-eclampsia and 8-10% of all preterm births result from hypertensive disorders. Half of women with severe preeclampsia give birth preterm. Small-forgestational-age babies (mainly because of fetal growth restriction arising from placental disease) are common, with 20-25% of preterm births and 14-19% of term births in women with pre-eclampsia being less than the tenth centile of birth weight for gestation.¹¹

A study done on 68 women with severe preeclampsia between 23 to 35 weeks' gestation underwent daily nonstress tests, biophysical profiles, and amniotic fluid assessments, resulting in no stillbirths and only two neonatal deaths from extreme prematurity.²²

However, the high risk of complication related to preterm delivery in the late-preterm infant, as well as the apparent negligible effect of mild preeclampsia on fetal growth and maternal health, highlight the importance of carefully selecting the appropriate time of delivery in pregnancies complicated by IUGR¹³.

One previous study Shear et al recommended expectant management in all patients with gestational age below 30 weeks irrespective of severe FGR.²³

Additional studies are needed to understand the causal pathways that may drive disordered fetal development in preeclampsia, as well as the potential impact of preeclampsia in altering expression of key genes involved in fetal programming and adult disease processes¹⁴.

Antenatal administration of corticosteroids for as few as 12–24 hours before delivery has been shown to decrease morbidity and improve survival rates of infants born before 34 weeks' gestation¹⁵.

Prospective, randomized controlled trials have shown that magnesium therapy is associated with a decreased incidence of cerebral palsy among survivors exposed to the medication between 24 and 31 weeks gestation ¹⁶.

Conclusion

We had lower incidence of eclampsia in preeclampsia and no female died due to preeclampsia this may be due to good follow up and the use of prophylactic magnesium sulphate.

Higher incidence of female delivered vaginally, higher incidence of term delivered baby also this may be due to good monitoring and most of them delivered by induction of labour.

Lower incidence of intrauterine fetal death this may be due to assessment of fetal wellbeing antenatally.

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