Original Research Article

Comparative study: normotensive and preeclampsia mother presenting with imminent symptoms of eclampsia in third trimester of pregnancy

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ABSTRACT

Background: This prospective study compares the maternal and fetal outcome in normotensive and preeclampsia mother presenting with imminent symptoms of eclampsia in third trimester. This prospective study was conducted in the department of obstetrics and gynaecology, Government Theni Medical College, Tamil Nadu, India in 2019.
Methods: A total 100 antenatal mothers were selected for the study. Group A - 50 known case of preeclampsia presented with imminent symptoms. Group B-50 previously normotensive patients present with imminent symptoms of eclampsia. Maternal and fetal outcome were analysed.
Results: Incidence of eclampsia - 0.1%, HELLP syndrome - 0.04%, pulmonary edema - 0.06%, PRES - 0.07%, abruptio placenta - 0.14% and maternal death in Group A was 2% and in Group B was 8%. Maternal complications are more in normotensive women (46%) presented with imminent symptoms than in preeclampsia women (26%) with imminent symptoms. Incidence of IUGR in Group A was 46%, whereas in Group B 12%. Incidence of preterm babies in Group A was 18%, whereas in Group B was 42%. Perinatal death incidence was 2.2% in imminent eclampsia.
Conclusions: Because known preeclampsia patients were aware of imminent symptoms and presented early to hospital. Early identification and treatment of this dreadful outcome at the imminent state itself can reduce the complications. In current status on preventive aspect of eclampsia, atypical presentation should also be considered for which new screening and diagnostic tools has to be developed.

Keywords: Fetomaternal outcome, Non severe preeclampsia, Severe preeclampsia

INTRODUCTION

Preeclampsia is a pregnancy specific multisystem disease diagnosed by the characteristic appearance of gestational hypertension and significant proteinuria from the second half of pregnancy in a previously normotensive and a proteinuria woman.[1]

Globally, pre-eclampsia is said to complicate 2-10% of pregnancies.[2] Although, the outcome is often good, pre-eclampsia often is associated with increased maternal and perinatal morbidity and mortality.[3] Severe pre-eclampsia with prodromal symptoms is called Imminent eclampsia. The prodromal symptoms are headache, epigastric pain,

nausea, vomiting, oliguria and blurring of vision. Eclampsia can occur any period of pregnancy antepartum, intrapartum and postpartum. Overall, 10%-15% of maternal deaths are directly associated with preeclampsia and eclampsia.[4,5]

The aetiology of preeclampsia is largely unknown and had been referred to as the ''disease of theories''.[6-8] Central to its pathophysiology is the abnormal placentation, release of soluble factors from the ischaemic placenta into maternal plasma plays a central role in endothelial dysfunction which is the most prominent feature of this disease.[9,10] The disease can occur in the absence of fetal tissue and the clinical

manifestations of the disease begin to resolve following delivery of the placenta.[11,12] It is more common in the first pregnancy, in women with previous history of preeclampsia, gestational diabetes, multiple gestation, connective tissue diseases, and extremes of maternal age.[13]

Management principles continuously balance the risks against the benefits of induced preterm delivery and maternal and fetal complications.[14] Mild preeclampsia may be managed on an outpatient basis. Antihypertensive may be commenced at systolic blood pressure of 150 mmHg.[15] Severe preeclampsia involves stabilization and delivery by the most expeditious route. Resuscitation and stabilization of patients with severe preeclampsia may involve administration of magnesium sulphate to prevent fits, anti-hypertensives to control blood pressure, restriction of fluid intake and delivery.[15]

It is estimated that about 63,000 maternal deaths occur from hypertensive diseases in pregnancy each year with more than 98% of these deaths occurring in developing countries.[16] These maternal deaths often result from complications associated with pre-eclampsia such as eclampsia, HELLP syndrome; (haemolysis, elevated liver enzymes and low platelet) and pulmonary edema. Others include stroke, abruptio placentae and disseminated intravascular coagulopathy.[17,18] Adverse perinatal outcomes associated with this disorder of pregnancy include intrauterine growth restriction, preterm delivery, admission into new-born intensive unit, and perinatal deaths.[19,20] Hence intensive surveillance is often required for optimal maternal and perinatal outcome.[21,22] The rate of progression and the occurrence of catastrophic complications are often difficult to predict.[23]

Objectives

- To analyze the determinants of imminent eclampsia.
- To analyze prevalence of imminent eclampsia and complications.
- To analyze the maternal and perinatal outcome in preeclampsia and previously normotensive presents with imminent eclampsia.
- To analyze the complications due to atypical presentation and compare with women with imminent symptoms.
- To discuss the timely measures to prevent eclampsia and its complications.

METHODS

Prospective study was conducted in preeclampsia and normotensive mother admitted with imminent symptoms and comparison of fetomaternal outcome.

A total 100 antenatal mothers were selected for this study.

Group A - 50 known case of preeclampsia presented with imminent symptoms of eclampsia.

Group B - 50 previously normotensive patients presented with imminent symptoms of eclampsia.

This study conducted at department of obstetrics and gynecology. Government Theni Medical College.

One-year duration of the study (2019). Informed consent obtained from all patients.

Inclusion criteria

- All pregnant women with imminent symptoms
- All pregnant women with antepartum eclampsia preceded with imminent symptoms.

Exclusion criteria

- Antenatal patient presented as eclampsia or post ictal phase in admission- without prodromal symptoms
- Epilepsy
- Trauma (head injury)
- Metabolic disorder (anaemia, electrolyte imbalance, hepatic / renal failure, hypoglycemia)
- Poisoning (strychnine, CNS stimulant)
- Infection (meningitis, encephalitis, cerebral malaria)
- Functional.

History was elicited from patient and if patient is unconscious or in postictal state, history was elicited from attender. A detailed history of the patient regarding age, parity, socio-economic status, booking status, gestational age, prodromal symptoms, details about imminent symptoms, convulsions, referral and treatment (including $MgSo_4$ administration) at referral centre were noted down. Details about previous obstetric history were recorded.

Emergency care

When the patient with convulsion was received, Patient nursed in left lateral position and suction of secretions done to prevent aspiration. The bedside rails were elevated to prevent maternal injury. Mouth gag was placed to prevent tongue bite. Oxygen by mask is given at rate of 8-10 liter/minute. IV line started.

Clinical evaluation

Detailed general examination and obstetric examination were done. In general examination conscious level, anaemia, pedal edema, facial puffiness, jaundice, BMI, blood pressure, pulse rate, respiratory rate, temperature, thyroid, fundus and nature of fits were recorded. RS, CVS, CNS were examined.

Loading dose MgSO$_4$ given as prophylactically in all patients with imminent symptoms and therapeutically in eclampsia. MgSO$_4$ was given according to Pritchard regimen.

All cases were started on Labetalol 100 mg bd was started and dose adjusted according to BP. If diastolic BP was > 110 mmHg. T. Nifedipine 10 mg TDS started. For patient who had uncontrolled BP, IV labetalol was given. Dose of IV labetalol was 20 mg IV bolus given initially. If the blood pressure did not decrease in 10 minutes, additional dose of 40 mg, then 80 mg administered every 10 minutes as needed to a maximum of 220 mg. For continuous IV administration, one 20 ml vial containing 100 mg Labetalol was added to 400 ml of lactated Ringers solution. The resultant solution had 1 mg/ml, the initial dose was 20 mg/hour. This dose was doubled every 20 minutes up to maximum of 220 mg. The therapeutic range is usually between 50 and 200 mg. Once the blood pressure reached the desired level, the IV solution was discontinued and the patient was started on oral labetalol, 100-400 mg every 6-12 hours up to maximum of 2400 mg.

Obstetric management

After stabilizing the patient, mode of delivery was planned according to gestational age, presentation, viability of fetus, cervical scoring and pelvic assessment.

Vaginal delivery was preferred and induction done with PGE$_2$ gel for patient who was not in labour. When patient was in labour, acceleration was done with aminotomy and oxytocin infusion. LSCS was done for maternal, fetal indication and when PGE$_2$ induction failed.

Immediately after delivery of baby, 10 units of oxytocin given intramusucular. The patient was carefully monitored. The patient was observed for 48 hours in eclampsia room. Blood pressure was monitored and antihypertensives continued. MgSO$_4$ was continued 4th

hourly till 24 hours after delivery by monitoring patellar reflex, respiratory rate and urine output. After 48hours patient shifted to postnatal or postoperative ward respectively.

Fetal outcome analysis

Details of baby such as birth weight, maturity, sex and complication like prematurity, IUGR, birth asphyxia and mortality were recorded. Baby was followed up till discharge.

Postpartum care

Postnatally antihypertensive drugs continued till 12 weeks and slowly tapered when blood pressure returned to normal. While discharge patient was advised for contraception and review after a week. Patient was advised about early booking in next pregnancy.

RESULTS

Our study results are

- Total number of deliveries in 2019 in study hospital is 8076
- Incidence of imminent eclampsia - 1.2%
- Incidence of eclampsia - 0.1%
- Incidence of HELLP - 0.04%
- Incidence of pulmonary oedema - 0.06%
- Incidence of PRES - 0.07%
- Incidence of abruption - 0.14%.

In preeclampsia mother, 40% imminent eclampsia occurred in age <25 years. 14% imminent eclampsia occurred in age <20 years. In normotensive mothers, 28% presented with imminent eclampsia in <20 years. 38% were in the age group of 20 to25 years. In both group, commonest age was <2. p value >0.05, statistically not significant (Table 1).

Table 1: Age distribution.

Age	Group A preeclampsia	Percentage	Group B normotensive	Percentage
<20 years	7	14%	14	28%
20-25 years	20	40%	19	38%
25-30 years	15	30%	11	22%
30-35 years	7	14%	5	10%
>35 years	1	2%	1	2%
Mean±SD	25.42±4.7		24.3±6.0	

p value: p >0.05

Regarding parity, 32 out 50 mothers were primigravida in Group B and 27 out 50 were primigravida in Group A. In both groups, it is common in primigravida. p value is 0.01, statistically significant (Table 2).

Imminent eclampsia is common in low socioeconomic class (41 preeclampsia mothers and 42 normotensive mothers). No difference between two groups, p value > 0.05, statistically not significant (Table 3).

Table 2: Parity.

Parity	Group A preeclampsia	Group B normotensive	p value
Primigravida	27	32	0.01
Multigravida	23	18	

Table 3: Socio economic class.

Class	Group A preeclampsia	Group B normotensive	p value
I	-	-	p > 0.05 (0.3)
II	-	-	
III	9	8	
IV	20	20	
V	21	22	

Regarding booking status, 42 mothers had > 3 visits in preeclampsia group and 44 in normotensive group (Table 4).

A total 76% preeclampsia mothers and 74% normotensive mothers were referred (Table 5). Regarding gestational age, 56% preeclampsia mothers and 62% normotensive mothers were in gestational age between 34-37 weeks. 26% of preeclampsia mothers and 10% of normotensive mothers were in gestational age > 37 weeks. p value is 0.3% which is not significant (Table 6).

Table 4: Booking status.

Booked	Group A preeclampsia	Group B normotensive
< 3 visits	8	6
> 3 visits	42	44

Table 5: Referral status.

Referral	Group A preeclampsia	Percentage	Group B normotensive	Percentage
From PHC /GH	38	76%	37	74%
Self	9	18%	8	16%
In patient	3	6%	5	10%

Table 6: Gestational age at presentation.

Gestational age	Group A preeclampsia	Percentage	Group B normotensive	Percentage
28-34 weeks	9	18%	9	18%
34-37 weeks	28	56%	31	62%
> 37 weeks	13	26%	10	20%
SD	0.66		0.63	
Mean	2			
p value		0.3		

Table 7: Prodromal symptoms.

Prodromal symptoms	Group A preeclampsia	Percentage	Group B normotensive	Percentage
Headache	34	68%	35	70%
Vomiting/epigastric pain	13	26%	13	26%
Blurring of vision	2	4%	2	4%
Oliguria	1	2%	-	

p value = 0.04.

Regarding presenting symptoms, 68% preeclampsia mothers and 70% normotensive mothers had headache. 26% mothers in both groups had vomiting and epigastric pain which is significant, p value < 0.05 (Table 7). In this

study, 28 preeclampsia mothers and 22 normotensive mothers had risk factors. Previous history of preeclampsia was the major risk factor in both groups.[13] Preeclampsia mothers and 8 normotensive mothers had previous history of preeclampsia (Table 8).

In relation to BMI, 52% of mothers in preeclampsia and 28% of normotensive mothers were obese p value was <0.05, statistically significant (Table 9).

Table 8: Risk factors.

Risk factors	Group A preeclampsia	Group B normotensive
Previous history of preeclampsia	13	8
Twins	1	4
Anaemia	4	6
Infertility treated	4	2
Gestational diabetes mellitus	4	-
Hypothyroid	2	2
Total	**28**	**22**

In comparison of blood pressure, 26 mothers in preeclampsia group and 24 mothers in normotensive mothers had BP <160/110 mmHg. Mean systolic BP (148.8±11.5) in preeclampsia and 158.6±17.72 in normotensive mothers and mean diastolic BP 98.6±7.5 in preeclampsia and 102.2±8.15 in normotensive mothers p value was 0.01, statistically significant (Table 10).

Regarding pedal edema, in preeclampsia group, 28 mothers had grade II Pedal edema. Whereas, in normotensive mother 36 had grade I pedal edema. p value was 0.02 (Table 11).

Table 9: Body mass index.

BMI	Group A preeclampsia	Group B normotensive
Underweight (< 18.5)	0 (0%)	1 (2%)
Normal (18.5-24.9)	4 (8%)	12 (24%)
Overweight (25-29.9)	20 (40%)	23 (46%)
Obese (> 30)	26 (52%)	14 (28%)

p value = 0.006.

Table 10: Blood pressure.

Blood pressure	Group A preeclampsia	Group B normotensive
< 140/90	6	3
< 160/110	29	26
> 160/110	12	15
> 190/110	3	6

Variable	Group A preeclampsia	Group B normotensive	p value
SBP	148.8±11.5	158.6±17.72	0.01
DBP	98.6±7.5	102.2± 8.15	0.01

Table 11: Pedal edema.

Grading	Group A preeclampsia	Group B normotensive
I	18	36
II	28	12
III	4	2
IV	-	-

p value = 0.02.

Table 12: Urine albumin - dipstick.

Urine albumin	Group A preeclampsia	Group B normotensive	p value
Nil	-	4	
1+	24	24	
2+	14	15	0.28
3+	9	5	
4+	3	2	

In relation to urine albumin, 24 mothers had 1+urine albumin in both groups. 14 and 15 mothers had 2+ urine albumin in preeclampsia and normotensive mothers respectively. p value is 0.2 which was statistically not significant (Table 12).

All women received MgSO$_4$ either in referral unit or in study hospital (Table 13).

Table 13: Administration of magnesium sulphate.

MgSO$_4$	Group A preeclampsia	Group B normotensive
Before admission	17	19
After admission	33	31

LSCS plays major role in Imminent eclampsia. In order to prevent complications, termination of pregnancy was

done by LSCS. p value 0.08, statistically not significant. 74% in Group B took for emergency LSCS directly in view of unfavourable cervix and maternal complications with poor bishop score. 60% patients in Group A undergone LSCS in view of unfavourable cervix before induction in view of maternal condition. In Group A 26%

and in Group B 14% of patients indication was due to failure to progress (Table 14).

Regarding induction delivery interval,82% of induced cases of Group B and 40% in Group A delivered in 12 hours. p value < 0.01, statistically significant (Table 15).

Table 14: Mode of delivery.

Mode of delivery	Group A preeclampsia	Group B normotensive
Labour natural	7	6
LSCS	43	44
Unfavourable cervix and maternal complications	60%	74%
Failure to progress	26%	14%
Cephalopelvic disproportion	10%	10%
Others	4%	2%

p value = 0.08 (not significant).

Table 15: Induction delivery interval in induced cases.

Induction- delivery interval	Group A preeclampsia	Group B normotensive
No. of induced cases	20	11
< 6 hours	-	7 (64%)
6-12 hours	8 (40%)	2 (18%)
12-24 hours	12 (60%)	2 (18%)

p value = 0.08 (not significant).

Table 16: Admission delivery interval.

Admission delivery interval	Group A preeclampsia	Group B normotensive
< 6 hours	2(4%)	33 (66%)
6-12 hours	25 (50%)	5 (10%)
12-24 hours	10 (20%)	5 (10%)
24-48 hours	8 (16%)	1 (2%)
> 2 days	5 (10%)	6 (12%)

Table 17: Maternal complications.

Complications	Group A preeclampsia	Group B normotensive
Antepartum eclampsia	3 (6%)	4 (8%)
Postpartum eclampsia	-	2 (4%)
Posterior reversible encephalopathy syndrome	1 (2%)	5 (10%)
HELLP* syndrome	3 (6%)	1 (2%)
Pulmonary edema	1 (2%)	4 (8%)
Abruptio placenta	5 (10%)	7 (14%)
Total	**13 (26%)**	**33 (46%)**

*HELLP: Haemolysis, elevated liver enzymes, low platelet count.

Table 18: Maternal mortality.

Cause	Group A preeclampsia	Group B normotensive	%
Pulmonary edema	-	4	80%
HELLP	-	1	20%

A total 76% cases were delivered within 12 hours in Group B in view of maternal and fetal condition, whereas 54% cases in Group A were delivered within 12 hours. In Group B the incidence of AP eclampsia, pulmonary edema, abruption was high, hence emergency caesarean was done in view of maternal condition. Therefore,

admission delivery interval was less in Group B when compared to Group A (Table 16).

Table 19: Neonatal outcome.

Outcome	Group A preeclampsia	Group B normotensive
Alive	38	37
Stillbirth	1	1
IUD	3	2
Neonatal death	8	10

p value = 0.4.

Maternal complications are more in normotensive women (46%) presented with imminent symptoms than in preeclampsia women (26%) with imminent symptoms (Table 17).

Maternal mortality incidence was seen in Group B patients. 80% death occurred due to pulmonary edema. 20% due to HELLP (Table 18).

Table 20: Neonatal birth weight.

Birth weight	Group A preeclampsia	Group B normotensive
< 1.5 kg	10	9
1.5-2 kg	18	9
2-2.5 kg	10	12
> 2.5 kg	12	20

p value = 0.6, (not significance).

Incidence of perinatal mortality was 2.2%. In Group B, the main reason was due to low birth weight and respiratory distress, 4 cases in Group B were due to asphyxia (maternal complication). In Group A perinatal mortality was due to IUGR, LBW and sepsis. p value >0.05, statistically not significant (Table 19). A total 40% Group B have good neonatal outcome with birth weight >2.5 kg. But in preeclampsia group only 20% had weight >2.5 kg (Table 20).

Table 21: Neonatal complications.

Complications	Group A preeclampsia	Group B normotensive
Low birth weight	9	21
IUGR	23	6

p value 0.004 (significant).

Incidence of IUGR in Group A was 46%, 12% in Group B. Incidence of preterm babies in Group A was 18%, 42% in Group B. p value 0.004, statistically significant (Table 21).

DISCUSSION

Incidence of eclampsia in this study was 0.1% which was presented with preceding imminent symptoms. Pradeep MR et al, in their study states that in developing countries incidence of eclampsia varies between 1 in 100 to 1 in 1700 pregnancies.[24] Bhalerao SA et al, in their study states that incidence of eclampsia in India was 0.94 to 1.8% and incidence in their study was 0.1%.[25]

Type of eclampsia

Antepartum eclampsia in this study was 77.7%, indicating antepartum eclampsia was more common than intrapartum and postpartum eclampsia (22.3%). Which was comparable to 86.95% antepartum eclampsia in study by Manjusha S et al and 45% antepartum eclampsia in study by Knight M et al.[26,27]

Age

A total 60% of imminent eclampsia were occurred in age <25 years in both groups which was comparable to 19-24 years in Pradeep MR et al, and 21-25 years in Manjusha S et al study.[24,26]

Socio-economic status

In this study imminent eclampsia were common in class V and IV which is 43% and 40% respectively which is comparable to 90% in study by Pradeep MR et al.[26]

Booking status

In this study almost all cases of imminent eclampsia were booked. Whereas the study of Sunitha TH et al, and Pradeep MR et al, they described that 95% and 88% of eclamptic cases were unbooked respectively.[24,28]

Parity

In this study 59% of imminent eclampsia cases were primigravida and 41% were multigravida.[32] Out of 50 cases were primi in Group B, 27 out of 50 cases were primi in Group A which is comparable to 56% in primigravida in study of Manjusha S et al, and 79% in the study of Sunita TH et al.[26,28]

Gestational age

In this study, 56% of patients in Group A and 62% of patients in Group B were in the gestational age of 34 to 37 weeks. 26% of patients in Group A and 10% of patients in Group B were in gestational age > 37 weeks which is comparable to study done by Pradeep MR et al, in which 94% eclampsia occurred in third trimester of which 42% were term patients.[24]

Prodromal symptoms

In this study, 68% in Group A had headache, whereas 70% had headache in Group B. 4% of cases in Group A had oliguria. Incidence of vomiting and blurring of vision were equal in both groups. It is comparable to 71%

prodromal symptoms in study of Kane SC et al, 80% in study by Walker JJ et al.[29,30]

BP *at the time of admission*

In this study 42% patients Group A presented with BP > 160/110 mmHg. 30% of patients in Group B presented with BP > 160/110 mmHg. In this study four patients had atypical presentation. In the study conducted by Pradeep MR et al, majority of patient had diastolic BP more than 110 mmHg and in the study of Sunita TH et al, 68% of eclampsia patients had BP > 160/110 mmHg.[24,28]

The study conducted by Matter F et al, 16% of patient had no hypertension and Manjusha S et al in their study states that fits can occur without preceding either hypertension or proteinuria.[26,28]

In the study of Walker JJ et al, 20% of patient had convulsion unexpectedly, with normal blood pressure and without proteinuria.[30]

Urine albumin

In this study, 24% patients in Group A and 14% in Group B had urine albumin >3+ which is comparable to 47.82% women had 4+ albuminuria in the study of Manjusha S et al.[26]

A total 8% patients in Group B presented with imminent symptoms even without proteinuria. Pradeep MR et al, studied eclamptic patient and in his study small proportion of group had no proteinuria.[24]

Referral details

In this study, 75% cases were referred. 6% of patients in Group A and 10% of patients in Group B were in-patients in this hospital developed imminent symptoms later.

Mode of delivery

In this study 87% of patients were delivered by caesarean section and 13% of patients were delivered by labour natural. LSCS plays major role in imminent eclampsia in order to prevent complications. Manjusha S et al, in their study had 56.25% of caesarean delivery and 45% in the study of Sunita TH et al.[26,28]

Admission delivery interval

In this study average admission delivery interval was 6 hours for imminent eclampsia. 76% cases were delivered within 12 hours in Group B in view of maternal and fetal condition, whereas 54% cases in Group A were delivered within 12 hours. In Group B, the incidence of AP eclampsia, Pulmonary edema, abruption were high. Hence emergency caesarean was done in view of maternal condition. Therefore, admission delivery

interval was less in Group B due to increased maternal complication.

Early termination of pregnancy reduced the maternal mortality and morbidity.

Convulsion delivery interval

In this study, eclampsia patient who delivered within 6 hours had no adverse maternal outcome. Eclampsia patient who delivered in 7-12 hours of first convulsion had 7.5% of perinatal death and no adverse maternal outcome. Eclampsia patient who delivered in 13-24 hours of first convulsion had 10% of perinatal death. This study was comparable to the study by Rajasri G et al, Sunita TH et a, in which women delivered within 6 hours had least perinatal death and delivered > 24 hours. had greater maternal and perinatal death.[28,31] In study by Thoman et al 60% morbidity in women delivered > 48 hours.[32] In study by Bhalerao A et al patient delivered 12-24 hours had 10.92% perinatal death and 1.82% maternal death.[25] In eclampsia patient delivered > 24 hours had 16.38% perinatal death and 3.64% maternal death.

The onset of convulsion to delivery interval was very important to decide maternal and fetal outcome.

Maternal complications

The maternal complications in this study

- Incidence of imminent eclampsia - 1.2%
- Incidence of eclampsia - 0.1%
- Incidence of HELLP - 0.04%
- Incidence of pulmonary edema - 0.06%
- Incidence of PRES - 0.07%
- Incidence of abruption - 0.14%.

In the study of Singh S et al, 35% of the eclamptic women have serious maternal complications includes placenta abruption - 10%, neurological deficit - 7%, pulmonary edema - 5%, cardiopulmonary arrest - 4%, acute renal failure - 4% and 1% maternal death.[33]

Maternal mortality

In Group A, maternal death was 2%. One patient in Group A was died due to HELLP syndrome and DIC. In Group B, maternal death was 8%. 4 cases in Group B were died due to refractory pulmonary edema. Maternal death was higher in group B when compared with Group A. In study by Bhalero A et al, maternal death was 5.45%.[25]

Birth weight

In this study 40% Group B have good neonatal outcome with birth weight > 2.5 kg. But in Group A, only 20% had weight > 2.5 kg.

A total 18% in Group B and 20% in Group A babies have birth weight < 1.5 kg. Manjusha S et al, and Rajasri G et al, in their study 21.7% and 22% of babies born to eclampsia patient were greater than 2.5 kg respectively and 78% of babies were between 1-2.5 kg.[26,32]

Perinatal outcome

In the study by Bhalerao A et al, 41.82% of babies delivered by eclamptic patient were preterm, 27.27% were IUGR.[25]

Incidence of IUGR in Group A was 46%, whereas in Group B 12%. Prematurity is the commonest complication in babies of eclamptic mothers since termination of pregnancy is done irrespective of gestational age for definite cure.

Perinatal mortality

In this study, incidence of perinatal mortality was 2.2%. whereas 25.45% in study by Bhalerao A et al and 19% in study by Sunita TH et al.[25,28]

CONCLUSION

By analysing the determinants of imminent eclampsia for better maternal and fetal outcome, the crucial factors are duration between imminent symptoms and timely administration of magnesium sulphate in nearby referring unit and decision for early termination of pregnancy at tertiary level hospitals.

In this study most dreadful complications were occurred in previously normotensive patients presented with high blood pressure and imminent symptoms.

Because known preeclampsia patients were aware of imminent symptoms and presented early to hospital. As compared to the developed countries the incidence of eclampsia is high in India. It has a great impact on maternal and fetal morbidity and mortality.

Proper antenatal care, early detection of pre-eclampsia, health education about imminent symptoms to patients and prompt management of pre-eclampsia are essential steps for prevention of eclampsia.

In current status on preventive aspect of eclampsia, atypical presentation should also be considered for which new screening and diagnostic tools has to be developed.

ACKNOWLEDGMENTS

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