



Study of Role of Expectant Management in Preeclampsia Remote from Term

Gynaecology

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ABSTRACT

Background: There is encouraging evidence for expectant management of preeclampsia remote from term, which is the second commonest cause of maternal mortality.

Objective: to assess role of expectant management of preeclampsia remote from term on maternal outcome and perinatal outcome.

Methodology: 94 eligible patients were enrolled & grouped as 'unstable' and 'stable' according to severity of condition and managed accordingly. Outcome variables included maternal complications and perinatal outcome.

Observations: Maternal complications were observed in 17 (56%) out of 30 aggressively managed patients. In the expectantly managed group, out of 64 patients, 16 (25%) had complications. In both the groups, prematurity and IUGR were the common neonatal complications observed. Perinatal mortality in the aggressive management group was 14 (12+2) i.e. 77.77% and 19 (12+7) i.e. 36.53% in expectant management group.

Conclusion: Expectant management of preeclampsia remote from term is an acceptable option with improved maternal & neonatal outcome.

KEYWORDS:

Preeclampsia

INTRODUCTION:

Preeclampsia is an idiopathic, multi-organ disorder, unique to human pregnancy. Preeclampsia complicates 6.8% of all pregnancies [1] with 5-10% being severe [2]. It is the second commonest cause of maternal mortality accounting for ~12% of maternal deaths [3]. It is also associated with high perinatal morbidity and mortality. Although pathogenesis of preeclampsia is poorly understood, it is clear that blueprint for its development is laid early in pregnancy [4]. The development of preeclampsia cannot be accurately predicted nor effectively prevented. Delivery of fetus and placenta remains the only definitive treatment. Preeclampsia remote from term i.e. preeclampsia that develops at <34 weeks of gestation is associated with high perinatal morbidity/mortality and prolonged hospitalization in the NICU because of prematurity. Previous evidence has shown encouraging results regarding perinatal outcome with expectant management. This study was undertaken to assess the expectant management of early-onset preeclampsia (preeclampsia remote from term) on the maternal outcome, prolongation of gestation and the perinatal outcome.

METHODOLOGY

Type of Study- Prospective observational study

Study Setting- Tertiary Care Hospital in Central India

Study Period- 18 months (01/01/2008 to 30/06/2009).

Inclusion Criteria-

- Singleton pregnancy with preeclampsia remote from term i.e. pregnancy between 26 – 34 weeks of gestation admitted in labor ward.

Exclusion Criteria-

- Multiple gestation
- Maternal medical disorders
- Antepartum hemorrhage
- Abnormal FHR pattern 4pq

Sample size- According to formula = -----
12

$$\frac{4 \times 0.7 \times 0.28}{0.1 \times 0.1} = 81$$

Detailed history and physical examination were performed according to pre-designed proforma. All patients were counseled and informed high risk consent from each patient was taken. Diagnosis of preeclampsia was based on ACOG criteria [5]-

1. Blood pressure 140mmHg systolic and
2. Blood pressure 90mmHg diastolic and
3. Proteinuria of 300mg per 24 hours or 30mg/dl (1+ on dipstick) in random urine sample.

On admission, patients were grouped into unstable and stable groups as per the severity of the condition; on the basis of predefined arbitrary, operational criteria.

Unstable patients were assigned to the aggressive management group and monitored in high risk obstetrical unit. They were given magnesium sulphate, antihypertensives and blood investigations were sent. High risk consent for termination was taken. Bishop's score was determined and induction was done with prostaglandins, oxytocin and amniotomy. LSCS was done for obstetrical indications wherever necessary.

Patients assigned to expectant management group were managed in high risk obstetrical unit. Management included bed rest in left lateral position, blood pressure measurement 4 hourly. BP was controlled with tab nifedepine and/or alpha methyl dopa. Aim of therapy was to keep systolic BP 140-150mmHg and diastolic BP 90-100mmHg. They received two doses of injection betamethasone 12mg IM administered 24 hours apart and repeated weekly. All patients underwent 24 hours urine collection for measurement of protein excretion and total urine output; daily urine protein excretion was measured by dipstick method. Patients were instructed to report the development of persistent headache, visual disturbances, epigastric or right upper quadrant pain, vaginal bleeding or decreased fetal movements. Blood investigations

included complete blood count, platelet count, kidney function test, liver function test, uric acid and prothrombin time and partial thromboplastin time. Fundus examination and renal scan were performed.

Fetal evaluation included serial ultrasound evaluation of fetal growth, estimation of amniotic fluid volume, fetal heart rate monitoring, clinical evaluation of fetal movements by daily fetal movement count (DFMC) and non-stress test twice weekly. Color doppler and biophysical profile were done wherever indicated. Outcome variables included comparison of maternal complications, laboratory findings, days gained during management, days of maternal hospitalization and perinatal outcome.

OBSERVATIONS-

Total 94 eligible patients were enrolled. Majority i.e. 55 (58.50%) were primigravida. Total 45 (47.90%) were between 21 – 25 years age group. Only 9 (9.60%) patients were more than 30 years age. Out of 94 patients, 58 (61.70%) were between 32 – 34 weeks of gestation. Nineteen (20.20%) patients were in 29 – 31 weeks.

Total 30 (31.90%) of 94 patients were given aggressive management while 64 (68.10%) patients were given expectant management. Sixty five (69%) out of 94 patients had severe preeclampsia and 29 (31%) patients had mild preeclampsia. 76 (80.90%) patients were delivered vaginally and 18 (19.10%) patients were delivered by LSCS. Out of 18 patients of LSCS, 7 (38.90%) patients were from aggressive management group and 11 (61.10%) patients were from expectant management group. Out of 30 patients from aggressive group, 7 (38.90%) patients were delivered by LSCS and 23 (30.30%) patients delivered vaginally. Out of 64 patients from expectant group 11 (61.10%) underwent LSCS and 53 (69.70%) patients had vaginal delivery. Out of 76 vaginal deliveries, 68 (89.50%) patients were induced for labor while 8 (10.50%) patients went into spontaneous labor and delivered. Out of 23 aggressively managed patients, 3 (13.00%) had spontaneous vaginal delivery and 20 (87.00%) patients required induction of labor. Out of 53 patients from expectant management group, 5 (9.40%) delivered spontaneously while 48 (90.60%) patients required induction of labor. Out of 18 patients of LSCS, 10 (56.00%) patients had fetal distress followed by cervical dystocia and abruptio placentae in 4 (22.00%) patients and 2 (11.00%) patients respectively.

Mean birth weight of neonates was 1206gm. Mean birth weight was highest i.e. 1379gm in 32 – 34 weeks gestational age and lowest i.e. 942gm in 26 – 28 weeks gestational age. In 29 – 31 weeks gestational age, mean birth weight was 1139gm. Out of total 94 neonates, 70 (74.46%) were live births.

Live births were maximum in 32-34 weeks gestational age and minimum in 26-28 weeks gestational age i.e. 50 (86.20%) and 7 (41.2%) respectively, whereas still birth were highest in 26-28 weeks gestational age and lowest in 32-34 weeks gestational age i.e. 10 (58.8%) and 8 (13.79%) respectively. In 26-28 weeks gestational age group, perinatal mortality was 13 (10+3). In 29-31 weeks it was 12 (6+6). Perinatal mortality was lowest i.e. 8 (8+0) in 32-34 weeks gestational age group.

Total 43 neonates were admitted to NICU. Longest mean stay i.e. 15.3 days was of neonates belonging to 29-31 weeks gestational age. Shortest mean stay of neonates was 11.1 days in 26-28 weeks gestational age.

Commonest complication was eclampsia seen in 13 (13.82%) patients followed by postpartum hemorrhage in 11 (11.70%) and abruptio placentae in 7 (7.44%) patients. Eclampsia, postpartum hemorrhage and abruptio placentae were more common in the gestational age group of 32-34 weeks. Renal failure and HELLP syndrome were also present in the same gestational age group. Complications were highest in the gestational group of 32-34 weeks and lowest in the gestational group of 29-31 weeks.

Table: 1: Maternal Complications According To Management Groups (N=94)

Maternal complication	Aggressive (n = 30)	Expectant (n = 64)
Eclampsia	9 (30%)	4 (6.25%)
Postpartum hemorrhage	3 (10%)	8 (12.8%)
Abruptio placentae	5 (16.66%)	2 (3.12%)
Abruptio placentae	5 (16.66%)	2 (3.12%)
HELLP syndrome	0	1 (1.56%)
Disseminated intravascular coagulopathy	0	0
Pulmonary edema	0	0
Maternal mortality	0	0
Total	17 (18.08%)	16 (17.02%)

Maternal complications were observed in 17 (56%) out of 30 aggressively managed patients. These were eclampsia in 9 (30%) patients, abruptio placentae in 5 (16.66%) patients and postpartum hemorrhage in 3 (10%) patients.

In the expectantly managed group, out of 64 patients, 16 (25%) had complications. Postpartum hemorrhage was the commonest complication i.e. in 8 (12.8%) patients, followed by eclampsia in 4 (6.25%) patients and abruptio placentae in 2 (3.12%) patients. (TABLE-1).

As far as neonatal complications are concerned, commonest were prematurity in 60 (63.82%) neonates, IUGR in 52 (55.31%) neonates and low birth weight in 48 (51.01%) neonates. Other complications included respiratory distress syndrome, birth asphyxia and sepsis. It was observed that as gestational age increased, serious complications like RDS, birth asphyxia and sepsis decreased.

Table 2: Neonatal Complications According To Management Groups (N=94)

Complications	Aggressive Management (n = 30)	Expectant Management (n = 64)	Total
Prematurity	16 (53.33%)	44 (68.75%)	60
IUGR	14 (46.33%)	38 (59.37%)	52
LBW	12 (53.33%)	36 (56.25%)	48
RDS	7 (23.33%)	11 (17.18%)	18
Birth asphyxia	3 (10%)	2 (3.12%)	5
Sepsis	1 (3.33%)	1 (1.56%)	2

In both the groups, prematurity and IUGR were the common complications observed. Prematurity in 16 (53.33%), IUGR in 14 (46.33%), LBW in 12 (53.33%) and RDS in 7 (23.33%) neonates were present in the aggressively managed group. In the expectantly managed group, prematurity in 44 (68.75%), IUGR in 38 (59.37%), LBW in 36 (56.25%) and RDS in 11 (17.18%) neonates were present. (TABLE-2).

Table 3: Perinatal Mortality According To Management Groups (N=94)

Management	Live birth	Perinatal mortality	
		Still birth	Neonatal mortality
Aggressive (n=30)	18(60.00%)	12(40.00%)	2(11.11%)
Expectant (n=64)	52(81.25%)	12(18.75%)	7(13.46%)
Total	70	24	9

Out of total 30 deliveries in aggressive management group, 18 (60.00%) were live births and 12 (40.00%) were stillbirths. From 18 live births, 2 (11.11%) died during admission in NICU. In expectant management group, there were 52 (81.25%) live births and 12 (18.75%) stillbirths. From 52 live births, 7 (13.46%) died in NICU. Total perinatal mortality was 33 (24+9) i.e. 47.14%. In the aggressive management group, it was 14 (12+2) i.e. 77.77% and 19 (12+7) i.e. 36.53% in expectant management group.

DISCUSSION-

In the present study, total of 94 patients preeclampsia between the gestations 26-34 weeks were studied for maternal and perinatal outcomes. It shows that preeclampsia occurred more frequently in primigravida 55 (58.50%) patients. Nulliparity is considered to be hallmark of preeclampsia. This is in accordance with study by Sibai et al [6]. In his study 60% patients were nulliparous.

Regarding prolongation of pregnancy, present study (mean and median days of prolongation of pregnancy were 6.7 days and 3 days respectively) correlates with the findings of 6 days median of Chammas et al [7], 5 days median of Haddad et al [8] and 7 days mean of Odendaal et al [9].

Regarding maternal complications, the occurrence of abruptio placentae in study by Haddad et al [8] was similar to our study with 5.9% incidence. In the study by Hall et al [10], commonest maternal complication was abruptio placentae in 69 (20.2%). This incidence was very high as compared to our study (7.44%). In the study by Sibai et al [6], only abruptio placentae and HELLP syndrome occurred. Abruptio placentae was seen in 4.3% in the aggressive group and 4.1% in the expectant management group. In our study, the occurrence of abruptio placentae in the expectant group (3.12%) was comparable, but it was higher (16.66%) in the aggressive group, mainly due to more referral cases.

As for neonatal complications, in the study by Haddad et al [8], perinatal outcomes were observed between three gestational age groups as < 29 weeks, 29 – 32 weeks and > 32 weeks. The rates of IUGR were not statistically significant among the three groups. The rate of respiratory distress syndrome was significantly higher in those managed at <29 weeks. Our study correlates with these findings. This study in accordance with our study observed that over all neonatal complications were rare among those who had expectant management at 32 weeks or more. The results sit well with findings from other similar studies mentioned above.

With respect to perinatal deaths, in accordance with our study, Haddad et al [8] reported maximum (92.30%) perinatal mortality < 29 weeks gestational age. In the study by Hall et al [10], 335 out of 340 patients had a live baby and only 5.6% had Apgar score < 6 at 5 min. 5 patients had stillborn.

In conclusion; it can be said that expectant management of preeclampsia remote from term, where both the mother and fetus are otherwise stable, in a tertiary institution, with pragmatic cut off points, allows valuable time to be gained and is an acceptably safe option resulting in improved neonatal outcome.

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