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Study of Feto-Maternal Outcome in Patient with Eclapmsia

Parul Udhnawala[1], Devang Gohil[2]

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[1]Assistant Professor, [2]Resident, Department of Obstetrics and Gynecology, Government Medical College, Surat, Gujarat 395001, India.

Corresponding Author: Devang Gohil, Resident, Department of Obstetrics and Gynecology, Government Medical College, Surat, Gujarat 395001, India.

E-mail: gohildev001@gmail.com

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Abstract

Objective: To assess the Feto-Maternal outcome in subjects of Eclampsia.

Method: This prospective descriptive study (case series) was carried out in department of Obstetrics & Gynaecology, Govt. Medical College, New Civil Hospital Surat, enrolling 61 subjects with Eclampsia admitted in Labour Room at New Civil Hospital, Surat over a period of two years from August 2010 to July-2012 & followed till discharge.

Summary: This study was conducted at New Civil Hospital, Surat enrolling subjects admitted with Eclampsia (n=61). The incidence of Eclampsia amongst our labour room admissions was 1.2%. All patient were given inj. Mgso4 for control of convulsions, and Adverse maternal outcome was noted in 33.4% subjects, Abruptio Placenta was the commonest complication noted in 13.1% subjects and maternal mortality in 2.4% subjects. Adverse Fetal outcome was seen in 67.2% subjects – prematurity accounting for 92.7% of the adverse Fetaloutcomes.

Conclusion: Maternal mortality and morbidity increases in subjects with eclampsia. So it is important for clinicians to educate women about the early warning sign of Pre-eclampsiaand to identify women with severe PET to prevent Eclampsia. MgSO4 is very effective to prevent convulsion in severe PET and to treat Eclampsia.

Keywords: Eclapmsia; Mortality; Morbidity

Introduction

India is among those countries which have a very high "Maternal Mortality rate" Hypertensive disorders complicating pregnancy are common and form one of the deadly triad along with Haemorrhage and Infection, that contribute greatly to Maternal morbidity & mortality (13% of all maternal death) [1].

Patho-physiological changes of eclampsia include loss of cerebrovascular autoregulation may lead to over dilatation or intense vasospasm of cerebral arterioles, both of which have been proposed in the pathogenesis of eclampsia. As part of the Auto regulatory response to Severe Hypertension, Cerebral Vasoconstriction occurs lead to Ischaemia, Cytotoxic oedema and Infraction. When the regulatory mechanism fail, at some Point, Dilatation of vessels occurs resulting in Hyper perfusion and Vasogenicedema. Post mortem finding in women with eclampsia include Cerebral Haemorrhages, Petechial, Fibrinoid necrosis and vascular damage, in addition to Micro *I*nfarcts [2].

The Department of Obstetrics and Gynaecology, Government Medical College, Surat is the largest referral centre in South Gujarat catering to high risk Obstetrics. 8.42% of patients that deliver here usually have Hypertensive Disease in Pregnancy. This study was undertaken to assess Fetal and Maternal

outcome in Eclampsia and to correlate the outcome to various responsible factors so as to enable us to draw out Hospital policy for Management of these cases to improve their outcome.

Aims & Objectives of Study

To assess the Feto-Maternal outcome in subjects of Eclampsia.

Methodolgy

Inclusion Criteria: All patient admitted with Eclampsia (Diagnosed according to following criteria) to our labour room and OB-ICU between August-2010 to July-2012.

Eclampsia: The onset of convulsions in women with Pre-Eclampsia that could not be attributed to the other cause was termed Eclampsia.

Sign and symptom of impending eclampsia

1. Headache persistent occipital or frontal headaches.

2. Visual disturbance, Blurred vison and Photophobia. Examination of optic fundi will show marked retinal oedema and in severe stages haemorrhages, exudates and papilledema may also be present.

3. Restlessness and agitation.

4. Epigastric and/or right upper quadrant pain.

5. Nausea and Vomiting.

Observation & Discussion

Table 1. Distribution according to demographic profile

	Total no. of subjects with eclampsia (percentage)
	Age (n=61)
<20 years	7 (11.5%)
20 to 30 years	45 (73.7%)
>30 years	9 (14.8%)
	Parity(n=61)
Primi gravida	39 (63.5%)
Multigravida	22 (36.5%)
	Gestational age at presentation (n=61)
<20 weeks	0
20 to 28 week	10 (15.8%)
28 to 36 week	42 (69.5%)
>36 week	9 (14.8%)
	Registration status (n=61)
Registered	11(18%)
Unregistered	40 (82%)

Incidence of Eclampsia is more common in age group bet ween 20 to 30 years compare to other reproductive age group.

Incidence of Eclampsia is more common in primi gravida compare to Multi gravida.

Incidence of Eclampsia is more common in 3rd trimester rather than in 2nd trimester.

Incidence of Eclampsia is more common in unregistered group compared to registered group (Table 1).

Table 2. Distribution of variety of abnormality in investigation

No abnormal investigations noted	18 (29.5%)
Abnormal investigations noted	43 (70.5%)
Elevated ALT (>45IU/ml)	26 (62%)
Decreased platelet counts (<1,00,000/ml)	3 (5.4%)
Elevated S. creatinine (>1.2 mg/ml)	14 (32.6%)

Incidence of abnormal investigation in eclampsia is high among this most common is increased Alanine Aminotransferase then elevated Serum Creatinine level (Table 2).

Table 3. Distribution according to mode of delivery, 1st Episode of Eclampsia, First Convulsion to Delivery interval, Treatment.

1. Distribution according to mode of Delivery	
Mode of Deliver	(n=61)
Vaginal	42 (68.9%)
Assisted Vaginal	4 (6.5%)
Caesarean section	15 (24.6%)
2. Distribution according to 1st Episode of Eclampsia	
Antepartum Eclampsia	52 (85.2%)
Intrapartum Eclampsia	2 (3.3%)
Postpartum Eclampsia	7 (11.5%)
3. Distribution according to First Convulsion to Delivery Interval	
<12 hours	45 (73.8%)
12-24 hours	16 (26.2%)
4. Distribution according to Treatment	
$MgSO_4$ alone was effective	53 (86.9%)
Other anti Convulsants were needed	8 (13.1%)

In this study most of patients deliver by vaginal route and 25% patients require operative intervention. Incidence of Eclampsia most of seen in Antepartum periods. Majority of patients (73.8%) delivery within 12 hours of 1st Episode

of convulsion. Magnesium Sulfate is an effective treatment for Eclampsia [3,4,5,6] (Table 3).

Table 4. Maternal Outcome (n=61)

Normal maternal outcome	40 (65.6%)
Adverse maternal outcome	21 (33.4%)
Variety of Adverse Maternal outcome (n=21)	
Abruptio Placenta	8 (13.1%)
Acute Renal Failure	2 (3.3%)
Disseminated intravascular coagulation	6 (9.8%)
Cerebral Hemorrhage	1 (1.6%)
HELP Syndrome	0
Mortality	4 (2.4%)

In this study (33.4%) Adverse Maternal outcome seen among this Abruptio Placenta (13.1%) is most commonly seen. 2nd most common Disseminated Intravascular coagulation (9.8%). Maternal Mortality (2.4%) seen in patients (Table 4).

Table 5: Fetal Outcome (n=61)

Normal fetal outcome	20 (32.8%)
Adverse fetal outcome	41 (67.2%)
Variety of adverse Fetal outcome (n=41)	
Prematurity	38 (92.7%)
Intrauterine growth restriction (IUGR)	7 (17%)
Intrauterine fetal death(IUFD)	6 (14.6%)
Respiratory Distress Syndrome	10 (24%)
Meconium Aspiration Syndrome	1 (2.4%)
Birth asphyxia	19 (46.3%)
NICU Admission	25 (61%)
Early neonatal death	10 (24%)

In this (67.2%) adverse Fetal Outcome seen among this (61%) patients require NICU admission. Most common (92.7%) have prematurity, 2nd most common is Birth Asphyxia (46.3%) and 3rd most common is Respiratory distress syndrome (24%). Fetal Mortality (24%) seen in this study [7] (Table 5).

Conclusion

Maternal mortality and morbidity increases in subjects with Eclampsia, so it is important for clinicians to educate women about the early warning sign of pre-eclampsia and to identify women with severe PET.

$MgSO_4$ as Anticonvulsant is effective to Prevent Convulsion in Severe PET.

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A Study on Maternal and Perinatal Outcome in Early, Full and Late Term Pregnancies

Mamatha K.

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Mamatha K, Associate Professor, Department of Obstetrics and Gynecology, Cheluvamba Hospital, Mysore Medical College and Research Institute, Mysore, India.

Corresponding Author: Mamatha K, Associate Professor, Department of Obstetrics and Gynecology, Cheluvamba Hospital, Mysore Medical College and Research Institute, Mysore, India.

E-mail: drmamatha8@gmail.com

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Abstract

Aims and Objective: The objective of this study was to analyze the maternal and perinatal outcomes in low risk early, full and late term pregnancies.

Study design: A retrospective cohort study of low risk women at term pregnancies were categorized in to early, full and late term. Statistical comparison was done using Cramer's V test.

Results: Out of 1500 women with low risk term pregnancies, 26.4% were early term, 64% were full term, and 9.1% were late term. Spontaneous progress was seen in 46%, acceleration with syntocinon was required in 41.7%, gel induction in 12.3% among which 88.1% delivered vaginally with 20 instrumental deliveries and cesarean section required in 11.9%. Statistically significant variation was seen when early term compared with full and late term. Neonatal outcomes showed more number of LBW, NICU admissions, and neonatal deaths in early term group compared to full term with significant P value.

Conclusion: Mothers who deliver at or after 39 weeks of pregnancy have better perinatal outcomes than do mothers who deliver before 39 weeks.

Keywords: Term pregnancy; Early term; Full term; Late term.

Introduction

Human pregnancy lasts 40 weeks from the first day of the last menstrual cycle. The international classification of Diseases defines term pregnancy as delivery between 37 weeks 0 days and 41 weeks 6 days [1,2].

According to the recent data maternal and neonatal outcomes are not the same across the 6-week gestational age range that constitutes term. The frequency of adverse outcomes is 'U' shaped with a nadir around 39 weeks 0 days through 40 weeks 6 days gestation [3,4].

With the advent of more accurate methods like early home pregnancy tests, ultrasound, home ovulation test kits, assisted reproductive technologies gestational age is more accurately determined [1,5].

The National Institute of child health and Human development, The American Congress of Obstetricians and Gynecologists, The American Academy of Pediatrics, The society of Maternal and Fetal Medicine, The March of Dimes and the World Health Organization conducted a workshop on 17th December 2012 in Bethesda, Maryland and recommends following definitions [6].

Early term- 37 0/7 through 38 0/7 weeks

Full term- 39 0/7 through 40 0/7 weeks

Late term- 41 0/7 through 41 6/7 weeks

Post term – 42 0/7 and beyond

In US vital statistics data shows higher fetal mortality risk after 42 weeks 0 days compared with 38 weeks 0 days through 41 weeks and also higher at 37 weeks 0 days through 38 weeks 6 days than at 39 weeks 0 days through 41 weeks 6 days. Infant mortality is lowest for births at 39 weeks 0 days through 41 weeks 0 days. Newborn mortalities such as respiratory distress syndrome, ventilator use and neonatal intensive care unit admission show the lowest rates between 39 weeks 0 days and 40 weeks 6 days with highest rates both before (37-38 weeks) and after (41-42 weeks) [7].

So, aim of this study was to know the outcomes at early, full and late term pregnancy.

Materials and Methods

This retrospective cohort study was conducted at our tertiary care hospital. A total of 1500 consecutive pregnant women from 37.0 weeks to 42.0 weeks admitted without any risk factors were included and were categorized into early, full and late term pregnancies.

Women with antenatal risk factors like anemia, Rh negative pregnancy, preeclampsia, gestational hypertension, gestational diabetes, elderly or short primi, cardiac disease, previous LSCS were excluded. Pregnant women with PROM, malpresentations. oligohydramnios, polyhydramnios were also excluded from the study.

Gestational age was determined by correlating LMP with first or early second trimester dates. Those who did not have early pregnancy scans and with unknown LMP or irregular cycle were excluded. Maternal and neonatal outcomes were studied and the results compared between the three groups using Cramer's V test, P-values <0.05 were considered significant.

Observations and Results

Out of these 1500 women most of them were in the age group of 20-30 years (77%), 849 (56%) were primigravidas, 457 (30%) were second gravidas, 155 (10%) were third gravidas and 39 (2.6%) were fourth gravida and above. (Table 1).

Table 1: Age and parity

Age (yrs)	Number (n=1500)	Percentage (%)
<20	280	1.8%
20-25	970	64%
25-30	198	13%
Parity		
Primigravida	849	54%
Gravida -2	457	30%
Gravida-3	155	11%
Gravida-4/>	39	2.6%

Early term were 398 (26.4%), full term were 944 (62.9%), and late term 158 (10.5%) pregnancies. Out of these spontaneous labour was progressed in 690 (46%) women, five of them required instrumental deliveries, c.section for fetal distress in five cases.

Synto acceleration was done in 625 (41.6%) cases, 505 (33.6%) of them delivered vaginally, nine of them required instrumentation and remaining 122 (8.1%) required C.section.

PGE2 induction was done in 185 (12.3%) cases for early spontaneous rupture of membranes, protracted latent phase or in those who have crossed 41+3 days. Among these 90 (6%) delivered vaginally, eight of them required instrumental deliveries and 51 (3.4%) of them required C. section (Table 2).

Instrumental deliveries were done in 22 (1.4%) cases (Forceps-12; Ventouse-10) and the indications were prolonged second stage (08), fetal distress (08) and failed maternal forces (06).

Cesarean sections were done in 178 (11.8%) cases. The indications were mainly for failed induction (37), Fetal distress (82), CPD (28), secondary arrest of labour (11), nonprogress of labour (03), cord presentation (02), DTA (14) and obstructed labour (01).

Among all these deliveries 1196 (79%) babies were healthy and 304 (20%) babies required NICU admission for LBW (136), meconium stained liquor (106), low APGAR score (60), LGA(29) for blood sugar monitoring and respiratory distress (07).

Table 2: Mode of delivery

Gestational age	Spontaneous labour	Synto acceleration	PGE2 induction	Vaginal Delivery	Instrumental deliveries	C.sections
Early term (398)	193 (48.6%)	179 (44.9%)	25 (6.2%)	298 (74.8%)	12 (3%)	99 (24.8%)
Full term (944)	436 (46.1%)	373 (39.5%)	117 ((12.3%)	848 (89.8%)	5 (0.5%)	78 (8.2%)
Late term (158)	59 (37.3%)	63 (39.8%)	33 (20.8%)	154 (97.4%)	5 (3.1%)	01 (0.6%)
Total (1500)	690 (46%)	625 (41.7%)	185 (12.3%)	1300 (86.6%)	22 (1.4%)	178 (11.8%)

Table 3: Indications for C. section

Indications	Number (178)	Percentage (%)
Fetal distress	82	46
Failed induction	37	20
Secondary arrest	11	6.1%
Non progress of labour	03	1.6%
DTA	14	7.8%
CPD	28	15.7%
Cord presentation	02	1.1%
Obstructed labour	01	0.5%

Table 4: Neonatal outcome

Neonatal outcome	Early term (n=398)	Full term (944)	Late term (158)	Total (1500)	p value
LBW	55 (13.8%)	74 (7.8%)	05 (31%)	136 (9%)	0.0001
Meconium	14 (3.5%)	74 (7.8%)	18 (11.6%)	106 (7%)	0.002
Low Apgar	40 (10%)	17 (1.8%)	02 (1.3%)	60 (4%)	0.0001
NICUadmission	77 (19.4%)	187 (21%)	37 (32%)	304 (20%)	0.562
LGA	05 (2.2%)	12 (1.2%)	09 (3.1%)	26 (1.7%)	NS
Neonatal deaths	04 (1%)	0	01 (0.6%)	05 (0.3%)	>0.0001

Five neonatal deaths were occurred four from early term due to meconium aspiration syndrome, one from late term group followed by C.section for fetal distress (Table 3,4).

Discussion

Optimal time of determination to deliver a pregnancy involves balancing risks and benefits. Elective delivery on or after 37 weeks of gestation is tried for medical (maternal, fetal) and nonmedical reasons. WHO performed multicountry facility based surveys of outcomes following deliveries showed gestational age at delivery averaged from 38.5 and 38.6 wks for all countries risks were elevated at 37 wks 0 days thro' 38 wks 6 days compared with 39 wks 0 days thro' 40 wks 6 days for early neonatal death [3].

In our study spontaneous deliveries and requirement of oxytocin was same in all the three groups. Interventions with gel induction was least in early term (6.3%) gradually more in full (12.6%) and late term (21.3%) pregnancies. Operative deliveries were more in early term (24.9%) compared to full term (8.4%) and late term (0.6%) pregnancies with significant P value.

Neonatal outcome-Low birth weight and low Apgar score babies were more in early term pregnancies with statistical significance whereas meconium was present gradually more from early, full and late term pregnancies. NICU admissions were more in late followed by full then early term pregnancies without statistical significance. Neonatal deaths were more in early term group followed by late term.

Melissa et al. has stratified risk of still birth and infant death by gestational age found that the risk of still birth at term increases with gestational age of 2.1/10,000 on going pregnancies at 37 wks, up to 10.8 per 10,000 on going pregnancies at 42 wks gestation [9].

Caughey AB et al. in his study of low risk women delivered beyond 37 wks gestational age found that rate of primary cesarean deliveries, operative vaginal delivery are increased at 40 wks gestation (p<0,001) and the rate of postpartum hemorrhage increased at 41 wks gestation [9].

In Clark et al. study neonatal outcome associated with elective term delivery found that Infants delivered at 38 – 39 wks (8%) required admission to NICU for over 4 to 5 days compared with 4.6% of infants delivering at 39 wks or beyond (p< 0.001). and concluded that elective delivery before 39 wks is associated with significant neonatal morbidity [7].

Tita et al. has compared neonatal outcomes in births after 39 weeks, at 37 weeks, and at 38 weeks. As compared with births at 39 weeks, births at 37 weeks and 38 weeks were associated with an increased risk of respiratory outcomes, mechanical ventilation, newborn sepsis, hypoglycemia, admission to NICU were increased by a factor of 1.8 to 4.2 for births at 37 weeks and 1.3 to 2.1 for births at 38 weeks [4].

Pareikh et al. in their study found early term

births (37 0/7-38 6/7 weeks) accounted for 34.1% of term births, 53.6% of early term births were due to spontaneous labor, followed by 27.6% indicated, 15.5% with no recorded indication, and 3.3% with premature rupture of membranes. Neonatal intensive care unit admission and respiratory morbidity were lowest at or beyond 39 weeks compared with the early term period. The greatest difference in morbidity was between 37 and 39 weeks. Respiratory morbidity was higher at 37 than 39 weeks regardless of route of delivery [10].

Conclusion

Mothers who deliver at or after 39 weeks of pregnancy have better perinatal outcomes than do mothers who deliver before 39 weeks. By redefining term in to early, full and late pregnancies for termination whenever indicated perinatal and maternal outcomes are better in full term pregnancies when compared with early term.

Conflicting Interest (If present, give more details): No

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