



Study of maternal and perinatal outcome in patients presenting with eclampsia to a tertiary hospital at a tertiary referral hospital

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Abstract

Objective: To Analyse the causes of maternal and perinatal morbidity and mortality along with suggestions to improve the outcome .

Materials and Methods: This study was conducted in the department of obstetrics and gynecology at Rangaraya Medical College , Kakinada from January 1st to December 31st 2011. A total of 80 cases of Eclampsia were studied .

Results: Maternal morbidity was seen in 56.5 % . pulmonary oedema was seen in 8 cases i.e. 10% , 4 cases developed post partum haemorrhage. 2 cases developed cerebrovascular accident .26 cases had operative interference in the form of outlet forceps and cesarean section. 5 % i.e. 4 cases developed puerperal infection and 1 case developed amniotic fluid embolism. Maternal mortality in 4 cases i.e 5% . 3 cases died of pulmonary oedema and 1 case died of amniotic fluid embolism. Perinatal mortality was highest among premature births .Out of 80 cases , 32 cases were perinatal deaths and neonatal deaths were 15 i.e. 18.75% ; therefore corrected, perinatal mortality was 40%. These deaths were due to prematurity the and low birth weights , excluding the intrauterine deaths .

Conclusion: It is concluded that as eclampsia is extremely preventable , there is a urgent need of public health education regarding antenatal care .As the majority of cases are young primigravida , it is desirable to enforce the legislation already existing as regards of age of marriage and early treatment of PIH must be emphasized.

INTRODUCTION

Eclampsia is defined as the occurrence of convulsions or coma , not caused by any coincidental neurological disease such as epilepsy in a woman whose condition also meets the criteria for Preeclampsia.

Out of 5-14% of preeclampsia cases , 0.04 % to 0.1% of women get eclampsia in developed countries .However the incidence is much more in developing countries .It is a dreadful condition and second most common of maternal morbidity and mortality in under privileged population. Eclampsia is now a rare disease in those developed countries where modern antenatal care is available to all pregnant women as a result pre eclampsia is detected early and treated effectively so

that the convulsive stage is seldom reached.

The picture is very different in developing countries like INDIA ,Particularly in rural areas where eclamptic patients may present for treatment in deep coma after many fits at home .Eclampsia becomes much more frequent as a term approaches 50 % of cases develop before delivery and rest of the 50 % cases are equally divided between intrapartum and post partum period .if first convulsion occurs 48 hrs after delivery it is necessary to rule out other causes of convulsion .The initial presentation of eclamptic patient is similar to the patients with pre eclampsia . Sibia reported that only 40 % OF patients had severe hypertension the presence of oedema and proteinuria among the eclamptic patient is variable .Whenever convulsion occur during pregnancy ,delivery , or puerperium it is to be treated as eclampsia unless otherwise proved.

Ours is a referral hospital to near by PHC , taluk head quarters hospital we get many patients of eclampsia patients treated with PRICHARD'S REGIMEN in terms of pulmonary edema , renal failure , cerebrovascular accidents .HELLP syndrome ,operative interventions etc

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.Perinatal outcome interms of still births ,neonatal deaths and need of NICU admissions.

MATERIALS AND METHODS

This study was conducted in the department of obstetrics and gynecology Rangaraya Medical college ,Kakinada , Andhrapradesh during the period from jan 1st to dec 31st 2014 .A random study of eclampsia cases was taken and 80 cases were studied . All the patients who had convulsions, who are more than 26 weeks of gestation or with out labour pains or with in first 24 – 48 hrs of post partum were included in the study .

A detailed history was taken, on admission and a thorough examination of patient was done , clinically general condition were noted .Number of convulsions before coming to the hospital and after admission and history of PIH were noted down .Any medication before coming to the hospital were also noted down .Blood pressure was recorded along with the examination of urine for albumin .Other investigations were also done. Patients were managed on the standard PRICHARD'S regimen .After examination an intravenous infusion was established with ringer lactate .A soft , firm , mouth gag was introduced in time , oxygen inhalation was given by nasal catheter . Throat was kept clear of mucus by suction .A indwelling catheter was introduced under aseptic conditions , input and output of fluids were monitored .The patient was given.

0 hours :

4 gm Magnesium sulfate { 20 ml of 20 % solution } given intravenously in 3-4 min .

Dilution :

8 cc of MgSO₄ {4 gm } +b12cc distilled water to make 20 % solution. 10 gram MgSO₄ (5%) intramuscularly (5gm each in each buttock deeply) .

If the convulsions were not controlled with in 15 min after the above medication , the intravenous medication was repeated administrating 4gms more of 20 % solution in 3-5 min or 2 gm depending on the weight of the patient .

Every 4 hours thereafter :

5gms of MgSO₄ injected deeply intramuscularly in a zig zag fashion using NO 20 gauge needle in alternate buttock admixed with 1% xylocaine to minimize the discomfort using the following safeguard prior to each dose .

- Patellar reflex was demonstrated to be present
- Urine output in previous 4 hrs measured atleast 100 ml
- Respirations were not depressed
- Respiratory rate being not less than 16 per minute.

If the patellar reflex was absent , the reflex was rechecked at an half an hourly intervals and the intramuscular dose of MgSO₄ injected ,once the reflex was demonstrated .

If respiratory depression presents 1gm of calcium gluconate in 10 ml of 10 % was given over 10 min .

Therapy with MgSO₄ was continued for about 24 hrs after delivery or 24 hrs after the last convulsion .

When the patient was in sedation obstetrical examination was conducted noting the height of the uterus, lie and presentation of fetus , amount of liquor .Frequency and intensity or uterine contractions were noted .The rate and regularity of fetal heart rate was recorded thereafter catheterizing the bladder , vaginal examination done , and the condition of the cervix ,position ,consistency , effacement ,dilatation and application to the presenting part , presence of membranes ,station of the presenting part , type and adequacy of pelvis was noted.

Antibiotics :

Prophylactic antibiotic Taxim 1gm given parenterally Bid on the first day and up to 24 hours after delivery and then shifted to oral taxim for 3 days .

Parenteral FLUIDS :

Initial amount of fluid that was necessary to combat dehydration was given . Later the input was adjusted to urine output and the requirements .Usually ,total fluid intake (after correcting dehydration) apart from haemorrhage or unusual fluid losses was limited to 2 liters of ringer lactate per 24 hrs or oral fluids to that amount .

Diuretics are not used except :

- When the patient had signs of pulmonary oedema.
- When there is reduction of urinary output to a degree that renal cortical necrosis was suspected .

Sedation :

IV calmpose 10mg was given when there is post convulsion restlessness.

Antihypertensives :

Orally labetolol and oral nifedipine was given when the diastolic blood pressure exceeds 110 mmHg and the patient was conscious and able to take oral fluids .

Delivery :

Steps to induce or accelerate labour with syntocinon drip ,ARM ,Misoprostol tablets depending up on the gestation and phase of labour was the routine procedure.

Type Of Delivery :

- Spontaneous delivery
- Outlet forceps delivery
- Caesarean section

RESULTS & DISCUSSION

Eclampsia is still a major cause of maternal and perinatal mortality in Developing countries .The incidence of eclampsia does not seem to have really come down. The majority of cases from low socio-economic class and most of them are unbooked cases .

The incidence of eclampsia in the present study for one year period from January 1st to December 31st at Government General Hospital ,Kakinada was found to be (0.76 %) 1 in 1315 .Incidence of eclampsia is 4-5 /1000 births in developing countries .In our country rates of incidence of eclampsia varies serinetal reported eclampsia incidence as 90/10000 after researching 161 eclampsia cases in 15 years , and tanneretal reported incidence as 7.7 % ingectal evaluated 38% eclampsia cases and reported as 120/ 10000.

mmHg			
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S.NO		NO. OF CASES	%
1.NO.OF CONVULSIONS BEFORE THE START OF TREATMENT	NO OF FITS <5	60	75%
	5-7	18	22.5%
	8- 10	2	2.5%
	>11	NIL	-
2.NO.OF CASES AFTER THE START OF TREATMENT	NO.OF FITS <3	NIL	-
	4-6	NIL	-
	7-10	NIL	-
	>11	NIL	-
	NO FITS	80	100%
3.CONVULSION TO DELIVERY INTERVAL IN ANTEPARTUM ECLAMPSIA CASES	TIME INTERVAL 0-6 HRS	6	8.57%
	7-12	22	31.42%
	13-24	42	60%
4.MODE OF DELIVERY	VAGINAL INCLUDING INSTRUMENTAL DELIVERIES	70	87.5%
	CESAREAN SECTIONS	10	12.5%

S.NO		NO.OF CASES	%
1.ANTENATAL CARE	BOOKED	10	12.5%
	UNBOOKED	70	87.5%
2.RESIDENCE	RURAL	58	72.5%
	URBAN	12	15%
	TRIBAL	10	12.5%
3.SOCIO ECONOMIC STATUS	LOW	63	78.75%
	MIDDLE	17	21.25%
	HIGH	NIL	0%
4.AGE GROUP	<20 YRS	34	42.5%
	20-24 YRS	30	37.5%
	25-29 YRS	12	15%
	30-35 YRS	4	5%
5.GRAVIDA	PRIMI	65	81.25%
	SECOND	11	13.75%
	THIRD	3	3.75%
	FOURTH	1	1.25%
6.GESTATIONAL AGE	26 -28 WEEKS	12	15%
	29-32 WEEKS	10	12.5%
	33-36 WEEKS	20	25%
	37-40 WEEKS	28	35%
	POST PARTUM	10	12.5%
7.TYPE OF ECLAMPSIA	ANTEPARTUM	52	65%
	INTRAPARTUM	18	22.5%
	POST PARTUM	10	12.5%
8.HIGHEST SYSTOLIC BLOOD PRESSURE IN mmHg	120-130	4	5%
	140-160	20	25%
	160-180	50	62.5%
	>180	6	7.5%
9.HIGHEST DIASTOLIC BLOOD PRESSURE IN	90-109	64	80%
	110-139	16	20%
	140-160	NIL	0%

S.No.		NO. OF CASES	%
1.MATERNAL MORBIDITY	TONGUE BITE	50	62.5%
	URTI	12	15%
	UTI	6	7.5%
	FAILED LACTATION	NIL	NIL
	PUERPERAL PSYCHOSIS	NIL	NIL
	PUERPERAL DEPRESSION	42	52.5%
	POST PARTUM BLUES	NIL	NIL
	PROLONGED HOSPITAL STAY		
	DEEP VEIN THROMBOSIS		
	MATERNAL COMPLICATIONS	PUMONARY OEDEMA	8
POST PARTUM HAEMORRHAGE		4	5%
CEREBROVASCULAR ACCIDENT		2	2.5%
45 CASES-56.5%		26	32.5%
		NIL	-

	OPERATIVE INTERFERENCE	NIL	-
	DISSEMINATED INTRAVASCULAR	NIL	-
	COAGULATION ABRUPTIO PLACENTA HELLP SYNDROME	4	5%
	RENAL FAILURE PUERPERAL INFECTION AMNIOTIC FLUID EMBOLISM	1	1.25%
MATERNAL MORTALITY	MATERNAL DEATHS	4	5%
FETAL OUTCOME	LIVE BORN	64	80%
	STILL BORN	16	20%
FETAL OUTCOME IN TERMS OF TYPE OF ECLAMPSIA	ANTEPARTUM	52	78.8%
	LIVE BORN	41	21.1%
	DEAD BORN	11	72.2%
	INTRAPARTUM	18	78.8%
	LIVE BORN	13	100%
	DEAD BORN	5	
	POST PARTUM	10	
	LIVE BORN	10	
	DEAD BORN	NIL	
FETAL OUTCOME IN TERMS OF BIRTH WEIGHT	< 1.5 Kg	10	12.5%
	1.6-2kg	18	22.5%
	2.1-2.5kg	30	37.5%
	2.6-3kg	12	15%
	Post partum	10	12.5%
FETAL OUTCOME IN TERMS OF APGAR	0	16	20%
	<4	4	5%
	4-8	22	27.5%
	>8	38	47.5%
NEONATAL COMPLICATIONS	PRETERM	38	47.50%
	IUGR	27	%
	NO COMPLICATIONS	15	33.75%
			18.75%
NEONATAL OUTCOME	NICU ADMISSIONS	40	50%
	NEONATAL DEATHS	10	25%
	NICU STAY UPTO 7 DAYS	30	75%

Eclampsia carries with it a maternal mortality rate that in a country today ranges between 0-14.6% depending on the type of patient, severity of illness, duration of disease and therapy used. 85% cases in our study did not receive any antenatal care and 12% had irregular antenatal care. Effective antenatal care helps in reduction of incidence of eclampsia.

Fits were controlled with MgSO₄ for antepartum and intra partum eclampsia before delivery. Fits got

controlled before delivery. The interval between first fit and delivery was within 24hrs in 60% of cases.

In all of the cases, fits were controlled within half an hour of the start of MgSO₄ regimen. In 100% of cases there were no fits after starting the treatment. Once the convulsions stopped initially, the recurrence rate was zero.

This very clearly shows the effectiveness of MgSO₄ in arresting convulsions and preventing any further convulsions developing.

From the observations in the present series, it is clear that MgSO₄ had no significant effect in blood pressure. Treatment of hypertension was done with oral nifedipine and labetalol.

Prophylactic antibiotic Taxim 1gm given parenterally Bid on the first day and upto 24hrs after delivery and then shifted to oral Taxim for 3 days. Taxim was used against the risk of infection of a bitten tongue, infection of urinary tract because of indwelling catheter and puerperal infection due to outside interference.

Steps were taken to deliver the patient as soon as possible. Electrolyte imbalance was corrected and urine output maintained.

Out of 80 cases, 10 cases were post partum eclampsia, 70 cases were antepartum and intrapartum eclampsia, labour was accelerated with IV oxytocin infusion and ARM if they were in active phase of labour in intrapartum eclampsia. In antepartum eclampsia, labour was induced with tablet zitotec per vagina or sublingual.

In the dosage schedule used, magnesium sulfate did not significantly interfere with uterine activity. 65% cases delivered by normal vaginal delivery, 22.5% cases delivered by outlet forceps, and 12.55 cases delivered by caesarean section.

Maternal morbidity was seen in 56.5%. pulmonary oedema was seen in 8 cases i.e. 10%, 4 cases developed postpartum haemorrhage.

2 cases developed cerebrovascular accident. 26 cases had operative interference in the form of outlet forceps and caesarean section. 55 i.e. 4 cases developed puerperal infection and 1 case developed amniotic fluid embolism.

Perinatal mortality was highest among premature births. Out of 80 cases, 32 cases were perinatal deaths and neonatal deaths were 15 i.e. 18.75%; therefore corrected perinatal mortality was 40%.

These deaths were due to prematurity and low birth weights, excluding the intrauterine deaths.

Summary :

An attempt has been made to study the maternal and perinatal outcome in eclampsia patients. Control of convulsion is the most important factor in the management of Eclampsia to save the mother and baby and MgSO₄ was found to be very effective anticonvulsant.

Among 10471 deliveries for a period of 1 yr from January to December 2014, there were 80 cases of eclampsia, giving an incidence of 1 in 131.5 (0.76%)

87.5% were booked cases and 12.5% were unbooked cases but no regular antenatal care. This demonstrates that lack of antenatal care is associated with increased incidence of Eclampsia.

- 72.5% belong to rural background.
- 15 % belong to urban
- 2.5% belong to tribal background
- 8.5% cases belong to low socio-economic strata
- 8.5% cases belong to middle socio – economic strata and none of them were high socio –economic strata.
- 2.5% were below 20 yrs
- 7.5% were 20-24 yrs
- 5 % were of 25-29 yrs
- % were of 30 -35 yrs age group.
- 2.5 % were primi gravidae
- 2.5% were second gravidae
- 75% were third gravidae
- 25 % were fourth gravidae

This confirms that eclampsia occurs mostly in primi gravidae

After MgSO₄ therapy, fits were controlled in all cases and there was no recurrence of fits which shows the effectiveness of MgSO₄ in arresting convulsions.

The interval between induction of labour and delivery was within a 24 hrs in 60% of cases.

MgSO₄ did not effect the blood pressure significantly. Anti hypertensives like oral labetalol and oral nifedipine were used to control hypertension.

Depression of knee jerks was seen to be the first sign of impending Magnesium toxicity and with the precautions taken before repeating the subsequent doses of MgSO₄, Magnesium toxicity was found to be negligible.

Magnesium sulfate was found to have no deleterious effect on the newborn and apgar scores of infants of mother receiving magnesium sulfate.

Maternal morbidity was seen in 56.5% cases. 1 case developed amniotic fluid embolism, 8 cases i.e. 10 % developed pulmonary oedema, 4 cases i.e. 5% developed postpartum haemorrhage.

2.5% cases developed cerebrovascular accident, operative interference was seen in 32.5% cases and puerperal infection was seen in 5% cases.

4 maternal deaths occurred accounting for 5%, 1 death due to amniotic fluid embolism and 3 cases due to pulmonary oedema.

CONCLUSIONS

It is concluded that Eclampsia is certainly preventable, there is an urgent need of public health education regarding antenatal care. As the majority of the cases are young primi gravidae, it is desirable to enforce the legislation already existing as regards the age of marriage and early treatment of PIH must be emphasized.

Competing interests

The authors have declared that no competing interests exist.
