

## Comparative Study Between the Efficacy of Low Dose Magnesium Sulfate And Pritchards Regimen In Eclampsia.

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### Abstract

**Background:** Eclampsia still remains the 2<sup>nd</sup> most common cause of maternal & perinatal mortality and morbidity. Hypertensive disorders complicating are common and form one of the deadly triad with hemorrhage and infection that results in much of the maternal mortality and morbidity related to pregnancy.

**Objective :** To study the adverse effects of low dose mgso4 therapy, advantages in preventing and controlling the recurrence of convulsions in eclampsia while reducing toxicity.

**Material & Methods:** A retrospective hospital based study was carried out in the Department of Obstetrics & gynecology of Guntur general hospital; a tertiary health care referral centre in guntur, Andhra Pradesh over a period of 2 years from June 2015 to September 2017. Statistical analysis was not used since it is a descriptive study.

**Results:** Out of the 120 pregnant women with eclampsia 60 cases were treated with low dose mgso4 regimen (study group) and 60 cases were treated with pritchard s regimen (control group) low dose mgso4 is effective in controlling convulsions. In the study group the recurrence rate was 13.3%. in study group, 10.0% of patients required <10gms of mgso4 .71.7% received between 11-20gms of mgso4, 11.7% received between 21-30gms of mgso4 and only 6.6% received 30gms of mgso4 as the treatment for eclampsia.

**Conclusion:** low dose MGSO4 regimen is a major contributing factor towards safe motherhood provided", the time of the dosage schedule is strictly adhered to". Low dose mgso4 is effective in controlling convulsions.

**Keywords:** Preeclampsia, Eclampsia, HELLP syndrome, MgSO4, Pritchards regimen, DIC.

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### I. Introduction

Eclampsia still remains the 2<sup>nd</sup> most common cause of maternal & perinatal mortality and morbidity. hypertensive disorders complicating are common and form one of the deadly triad with hemorrhage and infection that results in much of the maternal mortality and morbidity related to pregnancy. How pregnancy incites or aggravates hypertension remains unsolved and hypertensive disorders remain among the significant unsolved problems in obstetrics. Pregnancy induced hypertension is seen in all parts of the world and is a special problem in south asia. it accounts for 15.2% of maternal deaths in india .prevalance of PIH was 43.1/1000 pregnancies. The main aim of our study are to study the adverse effects of low dose mgso4 therapy, advantages of low dose mgso4 therapy in controlling & preventing the recurrence of convulsions in eclampsia, maternal and fetal outcome and comparison of the efficacy of low dose mgso4 with that of pritchards regimen,

### II. Materials And Methods

A retrospective hospital based study was carried out in the Department of Obstetrics & gynecology of guntur Medical College; a tertiary health care referral centre in guntur, Andhra pradesh over a period of 2 years from June 2015 to september 2017. Inclusion criteria for the study group was any patient with PIH complicated by convulsions , sudden onset coma or sudden loss of complete vision were eligible for therapeutic dose of low dose mgso4 or pritchards regimen.

After admission , informed consent was taken from the patient relatives or patient .relavent history is also taken. patient kept in labour room where doctors and nurses available round the clock. an immediate iv is secured. after brief and relevant examination , either low dose mgso4 or pritchards regimen is started according to the group to which the patient belong.

Drug regimen; low dose mgso4:

Modified low dose mgso4 regimen was administered to the eclampsia patient which was designed by DR. suman sardesai of Sholapur.

Loading dose:4 gm of 20%MGSO4 USP.7H2O(4 ampoules of 50% mgso4+12cc of distilled water to make it into 20cc of 20% solution) was given i.v stat. Maintenance dose:2 gm of mgso4 is given i.v every 3 rd hourly till 24 hours ,after delivery or after last convulsion whichever is later,if the convulsion recure after 15-20 mins of the loading dose ,additional 2 gms of mgso4 iv is given.

### III. Pritchards Regimen

Loading dose:4 gms og mgso4(2 ampls of 50% mgso4 +12cc of distilled water ) is given iv for 3-5 mins followed immediately by 10 gms of mgso4 given im into both the buttocks. Maintenance dose:5 gms of mgso4 is given im every 4 th hourly till 24 hrs ,after delivery or after the last convulsion whichever is later.if the convulsion recur after 15 -20 mins,additional 2 gm of mgso4is given im.

### IV. Results

**Table 1.AGE**

AGE	LOWDOSE MGSO4(STUDY GROUP)	PRITCHARD REGIMEN(CONTORL GROUP)	S
20& BELOW	30(50.0%)	40(66.7%)	
21-29	28(46.6%)	15(25.0%)	
30&ABOVE	2(3.4%)	5(8.3%)	
TOTAL	60(100%)	60(100%)	

#### 2. Residence

RESIDENCE	STUDY GROUP	CONTROL GROUP
RURAL	42(70.0%)	38(63.3%)
URBAN	18(30.0%)	22(36.7%)
TOTAL	60(100%)	60(100%)

**Table 3.GRAVIDITY**

GRAVIDITY	STUDY GROUP	CONTROL GROUP
G1	39(65.0%)	44(73.3%)
G2&G3	16(26.7%)	12(20.0%)
G4	5(8.3%)	4(6.7%)
TOTAL	60(100%)	60(100%)

**Table 4.Antenatal Care**

ANTENATAL CARE	STUDY GROUP	CONTROL GROUP
BOOKED	20(33.3.0%)	10(16.7%)
UNBOOKED	40(66.7%)	50(83.3%)
TOTAL	60(100%)	60(100%)

**Table 5.NO. Of Convulsions**

NO. OF CONVULSIONS	STUDY GROUP	CONTROL GROUP
1-4	57(95.0%)	52(86.7%)
5-10	3(5.0%)	8(13.3%)
TOTAL	60(100%)	60(100%)

**Table 6.Type Of Eclampsia**

Type Of Eclampsia	Study Group	Control Group
Antepartum	48(80.0%)	49(81.7%)
Intrapartum	6(10.0%)	5(8.3%)
Postpartum	6(10.0%)	5(8.3%)
Intercurrent	-	1(1.7%)
Total	60(100%)	60(100%)

**Table 7.MEAN ARTERIAL PRESSURE**

MAP IN MMHG	STUDY GROUP	CONTROL GROUP
110 & ABOVE	26(33.3%)	25(41.7%)
110-130	22(36.7%)	21(35.0%)
>130	12(20.0%)	14(23.3%)
TOTAL	60(100%)	60(100%)

**Table 8. EDEMA**

EDEMA	STUDY GROUP	CONTROL GROUP
PRESENT	49(81.7%)	52(86.7%)
ABSENT	11(18.3%)	8(13.3%)
TOTAL	60(100%)	60(100%)

**Table 9. Albuminuria**

ALBUMINURIA	STUDY GROUP	CONTROL GROUP
NIL	12(20.0%)	10(16.7%)
1+	35(58.3%)	24(40.3%)
2+	11(18.3%)	13(21.7%)
3+	1(1.7%)	8(13.3%)
4+	1(1.7%)	5(8.3%)
TOTAL	60(100%)	60(100%)

**Table 10. Gestational Age**

GESTATIONAL AGE IN WEEKS	STUDY GROUP	CONTROL GROUP
BELOW 28	11(18.3%)	5(8.3%)
28-32	21(35.0%)	17(28.3%)
>28-36	16(26.7%)	18(30.0%)
TERM	12(20.0%)	20(33.4%)
TOTAL	60(100%)	60(100%)

**Table 11. Total Dose Of Mgso4 Administered**

TOTAL DOSE IN GRMS	STUDY GROUP	CONTROL GROUP
11-20	43 (71.7%)	5(8.3%)
>20GRMS	17(28.3%)	55(91.7%)
TOTAL	60(100%)	60(100%)

**Table 12. Recurrence Of Convulsions After Mgso4 Therapy**

No. Of Convulsions	Study Group	Control Group
One	6 (10.0%)	2(3.3%)
Two	2 (3.3%)	1(10.0%)
Three Or Above	-	2(3.3%)
Total	60(100%)	60(100%)

**Table 13. Mode Of Delivery**

Mode Of Delivery	Study Group	Control Group
Vaginal	36 (60.0%)	29(50.0%)
Outlet Forceps	13 (21.7%)	15(25.8%)
Lscs	11(18.3%)	14(24.2%)
Total	60(100%)	60(100%)

**Table 14. Induction Of Labour**

METHOD	STUDY GROUP	CONTROL GROUP
MISOPROSTOL	31(86.11%)	29(96.66%)
OXYTOCIN	5(13.88%)	1(3.33%)
TOTAL	60(100%)	60(100%)

**Table 15. Complications**

Complications	Study Group	Control Group
Aspiration Pneumonitis	3(5.0%)	5(8.6%)
Intracrainal Hemorrhage	2(3.3%)	3(5.2%)
Puimmonary Embolism	1(1.7%)	-
Oliguria	3(5.0%)	2(3.4%)
Pulmonary Edema	3(5.0%)	2(3.4%)
Hyperpyrexia	3(5.0%)	2(3.4%)
Hellp Syndrome	-	2(3.4%)
Cortical Venous Thrombosis	1(1.7%)	1(1.7%)
Placental Abruption	2(3.3%)	-

Iud	7(11.7%)	12(20.6%)
Twins	1(1.7%)	-
Postpartum Psychosis	1(1.7%)	-

**Table16.Maternal Moprtality**

Group	Total No .Of Patients	Maternal Deaths	Percent
Study Group	60	1	1.7%
Control Group	60	2	3.3%

**Table 17.Causes Of Maternal Mortality**

CAUSE	STUDY GROUP	CONTROL GROUP
CEREBROVASCULAR ACCIDENT	-	1(1.7%)
LEFT VENTRICULAR FAILURE	-	1(1.7%)
PULMONARY EMBOLISM	1(1.7%)	-
TOTAL	60(100%)	60(100%)

**Table 18.Fetal Outcome**

Outcome	Study Group	Control Group
Iud	7(11.7%)	12(20.7%)
Live Birth	36(60.0%)	32(55.7%)
Still Birth	9(15.0%)	10(17.2%)
Abortions	8(13.3%)	4(6.9%)
Total	60(100%)	60(100%)

**Table19.Birth Weight**

BIRTH WEIGHT	STUDY GROUP	CONTROL GROUP
1-1.5	9(7.3%)	6(11.1%)
1.6-2.0	11(21.2%)	14(25.9%)
2.1-2.5	19(36.5%)	19(35.9%)
>2.5	13(25.0%)	15(27.1%)
TOTAL	52(100%)	54(100%)

**Table 20.Apgar Score At 1 Min**

APGAR SCORE	STUDY GROUP	CONTROL GROUP
<4	5(14.3%)	4(12.5%)
4-7	14(40.0%)	15(46.9%)
8-10	16(47.7%)	13(40.6%)
TOTAL	35(100%)	32(100%)

**Table 21.PERINATAL MORTALITY**

Perinatal Mortality	Still Birth	Eend	Total	Pnm%
Study Group	9	10	19	54.2%
Total Births=35				
Control Group	10	11	21	50.0%

## V. Discussion

This study of 120 cases of eclampsia of which ,60 cases were treated with low dose mgso4 regimen ,i.e study group and 60 cases were treated with Pritchard regimen in control group. In the study group 10.0% of patients required less than or equal to 10 gms of mgso4, received 71.7%received between 11-20gms og mgso4,11.7% received between 21-30gms of mgso4 and only 6.6% received 30gms of mgso4 as the treatment for eclampsia.in the control group ,81.7% of patients received more than 30 grms of mgso4 and only 8.3% of patients received between 11-20 grms of mgso4 as the treatment of eclampsia.

Cesarean section rate in the study group was 18.3% and in control group ,it was 24.2%.maternal mortality in the study group was 3.3% and in the control group ,it was 3.3%.intracarinal hemorrhage was the cause of death in the control group. The common maternal complications in the study group were aspiration pneumomitis (5%),intracranial hemorrhage(3.3%),hyperpyrexia(5%).abruption was present in 3.3% of cases.pulmonary embolism,CVT and postpartum psychosis were present each in 1.7% cases.

In the control group,8.6% of cases had aspiration pneumonia and 5.2% of cases had intracranial hemorrhage.hyperpyrexia and HELLP syndrome were present each in 3.4% of cases.cvt was present in 1.7% casesPerinatal mortality in the study group was 43.9% and in the control group it was 50%.the two most common causes of perinatal mortality were prematurity and birth asphyxia.

There was no significant difference in the perinatal mortality rate between the study group and the control group. Hence low dose mgso4 is in no way effecting the perinatal mortality and so low dose mgso4 regimen preferable to pritchards where the amount of mgso4 administrated to the patient is much less compared to pritchards regimen with good quality results.

### **VI. Conclusion**

Low dose mgso4 is a major contributing factor towards the aim of safe motherhood provided the timing of the dosage schedule is strictly adhered to .Low dose mgso4 regimen is effective in controlling convulsions.

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