



**ORIGINAL RESEARCH PAPER**

**Obstetrics & Gynaecology**

**A COMPARATIVE STUDY OF LOW DOSE MAGNESIUM SULPHATE REGIME VS STANDARD REGIME IN SEVERE PRE-ECLAMPSIA AND ECLAMPSIA**

**KEY WORDS:**

**Dr. Prem Singh**

Resident Doctor, Dept. of Obs & Gynae, JLN Medical College, Ajmer.

**Dr. Purnima Pachori**

Senior Professor, Dept. of Obs & Gynae, JLN Medical College, Ajmer.

**Dr. Urvashi\***

Associate Professor, Dept. of Obs & Gynae, JLN Medical College, Ajmer.  
\*Corresponding Author

**ABSTRACT**

Magnesium sulfate as a medication is used to treat and prevent low blood magnesium and seizures in women with eclampsia.<sup>29</sup> It is also used in the treatment of torsades de pointes, severe asthma exacerbations, constipation, and barium poisoning. It can be given by injection into a vein or muscle or by mouth. **Material & Method-** The present study was undertaken at J.L.N. Medical College, Ajmer. **Inclusion criteria-** 1) Patients with eclampsia, 2) Patients of imminent eclampsia. **Result-** In this study 120 eclamptic cases were treated with Pritchard Regimen and compared with another 120 cases which were treated with Dhaka Regimen. Recurrence of fits after starting the regimen was lower in both the magnesium sulphate regimen groups. The perinatal mortality rate do not vary in both the groups. **Summary and Conclusion -** Magnesium sulphate is the anti -convulsant drug of choice in women with eclampsia. The low dose Dhaka Regimen used for smaller woman appears to control and prevent convulsions effectively.

**INTRODUCTION**

Hypertensive disorders complicating pregnancy are prevailing disorders contributing to maternal and perinatal mortality and morbidity. It is responsible for 13% of maternal deaths worldwide including India. Pregnancy can induce hypertension in normotensive women or exacerbate already existing hypertension. Quality of life for both the mother as well as newborn rightfully has been the utmost concern. Maternal complications of severe preeclampsia include abruptio placentae, thrombocytopenia, hepatic hemorrhage and rupture, eclampsia, DIC, intra cerebral hemorrhage, cardio pulmonary failure, ARDS, acute renal failure and HELLP syndrome.

Eclampsia is the occurrence of convulsions in a patient with PIH. Eclampsia a dreadful disease of pregnancy which contributes to be of a great menace to the pregnant women. It causes significant mortality and morbidity in the fetus, newborn and the mother. A clear cut syndrome of preeclampsia almost always precedes the convulsions, but most obstetricians have seen eclampsia occurring in women, who just few hours earlier displayed only moderate hypertension and no proteinuria.

A major breakthrough in the management of eclampsia came when Dr. J.A. Pritchard published his standardized treatment regime in 1984. 'Pritchard regime' includes loading dose of magnesium sulphate 4gm I.V and 5 gm. I.M in each buttock. This is followed by a maintenance dose of 5 gm. I.M 4 hourly.

**MATERIAL AND METHOD**

The present study was done at JLN Medical College, Ajmer. Ethical approval was taken by the Ethical Committee.

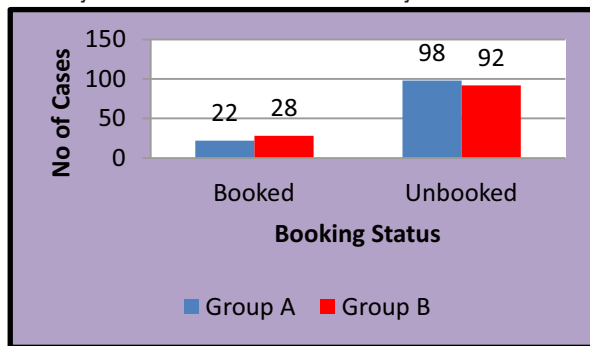
The inclusion criteria for this study was Patients with eclampsia, Patients with imminent eclampsia The regimens used for the study were low dose MgSO<sub>4</sub> as well as the Pritchard regimen.

**RESULT**

The present study was done comparison of LOW DOSE MAGNESIUM SULPHATE REGIME VS STANDARD REGIME IN SEVERE PRE-ECLAMPSIA AND ECLAMPSIA.

Out of 120 cases of Pritchard regimen 82 cases delivered by labour natural, 28 cases by LSCS and 10 cases by Preterm Assisted Breech delivery. Out of 120 cases of Dhaka Regimen

78 cases delivered by labour natural, 30 cases by LSCS and 12 cases by Preterm Assisted Breech delivery.



**Chart: 1 showing Antenatal case status in both groups**

**TABLE 1: NO OF CONVULSIONS BEFORE ADMISSION IN BOTH GROUPS**

No of convulsions before admission	Group A (Dhaka Regimen)		Group B (Pritchard Regimen)		P
	No.	%	No.	%	
0	19	15.84	20	16.66	0.51
1-2	48	40	64	53.33	
3-5	45	37.5	32	26.68	
6-8	6	5	4	3.33	
>9	2	1.66	0	0	
Total	120	100	120	100	
Mean ± S.D.	2.93 ± 2.46		2.4 ± 1.35		

**TABLE 2: SERUM MAGNESIUM LEVEL IN BOTH GROUPS**

Serum Magnesium level	Group A (Dhaka Regimen)	Group B (Pritchard Regimen)
Mean	4.69	5.01
S.D	0.3	0.4
P	0.0023	

**TABLE 3: NO. OF CONVULSION AFTER DELIVERY IN BOTH GROUPS**

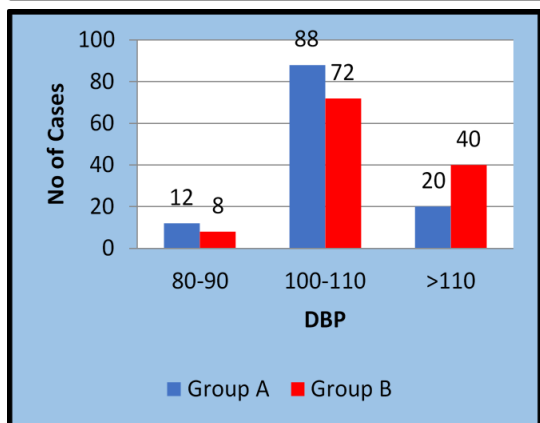
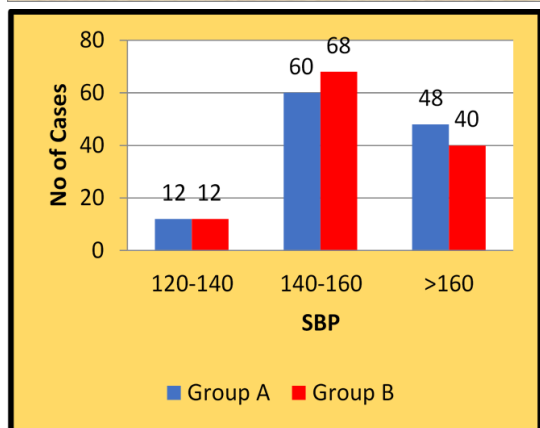
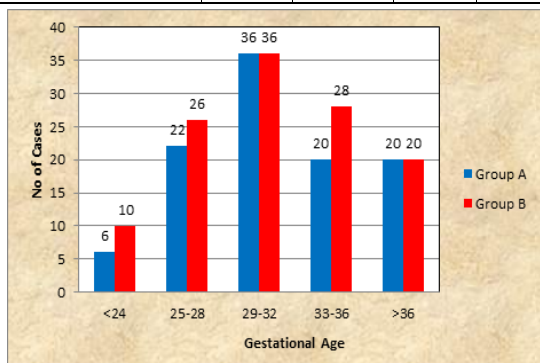
No of convulsion before admission	Group A (Dhaka Regimen)		Group B (Pritchard Regimen)	
	No.	%	No.	%
0	104	86.67	100	83.33
1	16	13.33	20	16.67
Total	120	100	120	100

**TABLE 4: MONITORING OF IMPENDING MAGNESIUM TOXICITY IN BOTH GROUPS**

Monitoring of impending magnesium toxicity	Group A (Dhaka Regimen)		Group B (Pritchard Regimen)	
	No.	%	No.	%
Deep tendon reflex	12	10.00	16	13.33
Resp. distress (RR≥20/min)	3	2.50	5	4.17
SPO <sub>2</sub> <95%	4	3.33	5	4.17
Urine output <30 ml/hr	4	3.33	6	5.00

**TABLE 5: MATERNAL COMPLICATIONS IN BOTH GROUPS**

Maternal Complications	Group A (Dhaka Regimen)		Group B (Pritchard Regimen)	
	No.	%	No.	%
APH	8	6.67	11	9.17
PPH	5	4.17	7	5.83
Acute Kidney Injury	4	3.33	6	5.00
Pulmonary edema	3	2.50	4	3.33
HELLP Syndrome	3	2.50	3	2.50
DIC	3	2.50	4	3.33



**Chart 2: Blood Pressure wise distribution in both groups**

Perinatal Outcome:- Pritchard regimen gave birth to live baby 80 cases (66.66%) Dhaka Regimen 89 cases (74.16%). Still born in Pritchard Regimen were 12 cases (10%). In Dhaka Regimen 8 cases (6.66%). IUD in Pritchard Regimen were 14 cases (11.67%). In Dhaka Regimen 13 cases (10.84%) The neonatal death with Pritchard regimen 14 cases (11.67%). In Dhaka Regimen 10 cases (8.33%) The p value being 0.79 the condition of the child does not differ significantly in either regimens.

**DISCUSSION**

In this study the mean age in Dhaka regimen is 23.1 years and mean age in Pritchard regimen is 22.8 years. In this study mean gestational age in Dhaka regimen was 31.86 weeks and in Pritchard regimen was 31.11 weeks. In this study majority of cases had Diastolic blood pressure between 100-110 mm Hg in Dhaka regimen 73% and in Pritchard regimen 60%.

Alexander and colleagues (1999) reviewed 278 singleton liveborn infants weighing 750-1500 gms delivered of woman with severe pre-eclampsia in Parkland hospital. 50% were induced and 50% underwent caesarean delivery without labor. Induction was not successful in 35% of women of induced group. Similar results were reported by Nassar and colleagues (1918).

In the study of eclampsia collaborative trials Group 64% were primis. In the study by N.W.M. Hospital, Bombay 64.9% were primis. According to Mudaliar over 75% were primis. In a study by Lalkoand et al (1997) 57.3% were primis. In this study in Dhaka regimen 66.7% were primis and in Pritchard regimen 40% were primis. In other study reveals that 40.5% were under 20 years, 56.8% were between 21-29 and 2.7% above 30 years. Lolkand et al in his study found that 40.7% were less than 20 years. In a study by Katz VL and colleagues in the sacred heart medical center USA the mean age of eclampsia was 22 years.

**SUMMARY AND CONCLUSIONS**

The low dose Dhaka Regimen which was used for smaller woman seems to control and prevent convulsions effectively. In this study Dhaka Regimen showed that serum levels remain below the toxic levels. The present study provides further evidence for the routine use of magnesium sulphate for eclampsia convulsions. As long as there is adequate urinary output clinical monitoring appears to be sufficient.

There is no difference in maternal mortality, perinatal mortality, maternal morbidity and cesarean section rates among the both magnesium sulphate regimens. The study indicated that both Dhaka and Pritchard Regimen are similar when it comes to control of convulsions in cases with eclampsia.

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