COMPARISON OF EFFICACY AND FETOMATERNAL OUTCOME WITH LOW DOSE AND STANDARD PRITCHARD'S REGIMEN OF MAGNESIUM SULPHATE IN ECLAMPSIA

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ABSTRACT

BACKGROUND

Eclampsia, a hypertensive disorder of pregnancy is a common obstetric emergency, which leads to significant maternal morbidity, perinatal morbidity and mortality. The Pritchard's regimen of magnesium sulphate remains as the standard regimen worldwide.

The aim of this study is to compare the effectiveness, side effects and fetomaternal outcome using low-dose magnesium sulphate with the results of Pritchard regime.

MATERIALS AND METHODS

A comparative prospective study including 120 eclampsia patients designed into group I and group II treated with low-dose magnesium sulphate and Pritchard's regimen was conducted in the Department of Obstetrics and Gynaecology for a period of 18 months between January 2015 to June 2016.

RESULTS

In the present study, there was 100% control of seizures in both the groups. No recurrence of seizures were seen in 57 (95%) of cases in group II (low-dose regimen) and 3 (5%) cases showed recurrence, which were controlled by giving additional doses. In group II, loss of patellar reflexes was seen in 6 (10%), reduced urine output was seen in 3 (5%) of cases, mild PPH was observed in 3 (5%) cases and perinatal mortality in 18 (30%) cases, which were lower than that of group I (Pritchard's regimen).

CONCLUSION

Low-dose magnesium sulphate is effective in controlling convulsions in eclampsia. This regimen is highly suitable for use in Indian women who are known to have low body mass index.

KEYWORDS

Eclampsia, Low-Dose Magnesium Sulphate, Pritchard's Regimen.

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BACKGROUND

Hypertensive disorders of pregnancy cause 15 to 20% of maternal mortality and 20 to 25% of perinatal mortality. Preeclampsia is identified in 3.9% of all pregnancies. Preeclampsia-eclampsia syndrome remains an important cause of maternal and perinatal morbidity and mortality especially in underprivileged population.[1] About 10%-15% of maternal deaths are directly related to preeclampsia and eclampsia in low and middle income countries, especially Sub-Sahara African region and South Asian regions, which contributes to approximately 88% of maternal deaths worldwide.[1] In South Asian region, maternal mortality rate is 182/1 lakh live births, which accounts for 66,000 maternal deaths per year, which contributes to 22% of global burden of maternal mortality. Eclampsia accounts for 12% of maternal mortality in world and 8% of maternal deaths in India. In India, maternal mortality rate is 167/1 lakh live births. The Pritchard's regimen of magnesium sulphate remains as the standard regimen ever since its introduction by Dr. J. A. Pritchard in 1955.[2] Despite of its proven benefits, the acceptance in many low and middle income countries remains low, especially at primary and secondary care levels. Undue apprehension regarding its dose-related toxicity remains the limiting factor particularly in clinical environment where the capacity for patient monitoring is limited. Pritchard in 1984 suggested that the dose of magnesium sulphate maybe reduced for low BMI women in Asia as administrating Pritchard's regimen might prove to be hazardous for them. Therefore, it appears logical to modify the dose of magnesium sulphate especially in Asian women with lower BMI. Various low-dose magnesium sulphate regimens studies have been carried out to determine the lowest effective dose with decreased side effects and

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comparable efficacy, but the available data are too limited to draw a reliable conclusion.

The present study was therefore conducted to compare the efficacy and safety, toxicity profile, side effects and foetal outcome of low-dose magnesium sulphate regimen as proposed by Mosammat Rashida Begum (Dhaka regimen) with standard Pritchard's regimen in Andhra Pradesh state of southern India, which lacks such. Therefore, the present study can be helpful to medical healthcare providers even at primary and secondary levels to administer magnesium sulphate to the patients where the monitoring is limited.

MATERIALS AND METHODS

The present study is a comparative prospective study conducted in patients admitted to the Department of Obstetrics and Gynaecology for a period of 18 months between January 2015 to June 2016. Total 120 patients were included in which group I had 30 eclampsia and 30 imminent eclampsia cases and Group II had 30 cases of eclampsia and 30 imminent eclampsia cases.

Women aged 18-35 years who develop hypertension after 20 weeks period of gestation and within 6 weeks postpartum, all the cases of eclampsia (antepartum, intrapartum, intercurrent) and all cases of imminent eclampsia, hypertension with frontal headache, epigastric pain, vomiting and blurring of vision were included in the study.

Patients with postpartum eclampsia; patients presenting with convulsions of other causes like epilepsy, cerebrovascular accidents, rupture of aneurysm, meningitis, encephalitis, cerebral tumours, hyperventilation syndrome, and metabolic abnormalities; patients treated outside with magnesium sulphate and those who were deeply unconscious with CVA, renal failure, HELLP syndrome, massive pulmonary embolism, associated massive haemorrhage, DIC and shock (including sepsis) were excluded from the study.

Group I- Patients receiving standard Pritchard regimen consisting of loading dose magnesium sulphate 4 gm intravenous in dilution over 4-5 minutes followed by 10 gm of 50% MgSO4 intramuscular (5 gm into each buttock). Maintenance dose of 5 gm of 50% MgSO4 intramuscular into alternate buttock 4th hourly till 24 hours after delivery or last convulsion, whichever was later.

Group II- Patients receiving low-dose magnesium sulphate regimen as advocated by Begum et al in 1998 at Dhaka Medical College, Bangladesh, consisting of loading dose magnesium sulphate 4 gm intravenous in dilution over 4-5 minutes followed by 6 gm of 50% MgSO4 deep intramuscular (3 gm into each buttock). Maintenance dose of 2.5 gm 50% MgSO4 given intramuscular into alternate buttock 4th hourly till 24 hours after delivery or last convulsion, whichever was later.

If there was a seizure recurrence later than 30 minutes after administration of loading dose, additional dose of 2 gm was administered intravenously. If the seizures were not controlled with additional 2 doses, then the case is labelled as low-dose failure and shifted to standard Pritchard regimen. All the cases were monitored fourth hourly for evidence of magnesium toxicity in terms of depression of deep tendon reflexes, increased respiratory rate and decreased urine output. Magnesium sulphate doses were given only if presence of patellar reflex, respiratory rate is 16/min. or urine output is >30 mL/hr. If urine output was <100 mL in 4 hours dose is reduced from 2.5 grams to 1.5 grams. If there is loss of knee jerks with normal respiratory rate, the dose of MgSO4 is skipped until return of reflexes. If there is respiratory depression along with loss of knee jerks, then 1 gm calcium gluconate is administered intravenously. Patient is kept on oxygen mask with back rest. If necessary, ventilatory support is provided.

The rate of control of seizures, prevention of seizure recurrence, the rate of toxicity profile in terms of loss of patellar reflexes, decreased urine output, increased respiratory rate and side effects of magnesium sulphate like heating sensation, vomiting, injection site induration and abscess were compared in both groups and analysed. The effect of magnesium sulphate on uterine action such as hypotonic, hypertonic and in coordinate uterine action, progression of labour and foetal heart rate was compared in both groups. Depending on presence of obstetric indications, some cases are decided for elective LSCS and in others depending on cervical changes, induction of labour is planned. The effect of magnesium sulphate regimen on the uterine action and progression of labour monitoring done with the help of partograph. Serum magnesium sulphate levels are measured after 3rd, 4th maintenance dose or when loss of patellar reflex or decreased urine output. Mode of delivery is noted, perinatal mortality and morbidity is measured in terms of Apgar score at the time of delivery and number of NICU admissions were noted. Maternal morbidity in terms of duration of hospital stay is noted.

RESULTS

Out of 120 patients in the study group, majority of cases were primigravidae constituting 69.16% of cases and most of the cases were in the age group of 21 to 30 years, which constitutes 79 (65.83%) of the cases. In the present study, most of the patients present in the third trimester between 37 weeks to 41 weeks, which comprises of 63 (52.5%) indicating increased incidence of hypertensive disorders of pregnancy in late trimester. Mean Period of Gestation (POG) was 35 weeks for group I and 36 weeks for group II (Table 1). Most of the patients were in the normal range of body mass index, i.e. 18.6 to 24.9 kg/m2, which constitutes 91.7% of the patients (Figure 1). Majority of cases are unbooked consisting 53 (88.33%) in group I and 56 (93.33%) in group II indicating the importance of regular antenatal check-ups in early identification and control of progression of disease (Figure 2).

In the present study, seizures were well controlled in both regimes. There is 100% control of seizures in group I (Pritchard's regime) of MgSO4, whereas in (low-dose regime); group II, there is control of seizures in 95% of cases. 3 cases had recurrence of seizures, which is controlled

with additional 2 gm of intravenous infusion (Table 2). In the group I (Prichard's regimen), loss of patellar reflex is seen in 11 (18.33%) and decreased urine output was observed in 12 (20%) of cases, whereas in group II (low-dose regimen) loss of patellar reflexes was seen in 6 (10%) and urine output was seen in 3 (5%) of cases (Figure 3). The present study shows that there is no much difference in the effect on uterine action and progression of labour in either of the regimens (Figure 4). In the group I (Pritchard's regimen), mild PPH was seen in 6 (10%) of cases, whereas in group II (low-dose regimen), mild PPH was observed in 3 (5%) of cases (Figure 5). There were no cases of severe PPH. There is 10% of cases in group I and 14% of cases in group II had abnormal foetal heart rate. In the study, normal vaginal delivery was seen in 33 (55%) of cases in group I (Pritchard's regimen) and 36 (60%) of cases in group II (low-dose regimen). LSCS was observed in 26 (43.34%) of group I (Pritchard's regimen) cases and 24 (40%) of group II (low-dose regimen).

In the present study, majority of cases delivered low birth weight babies, i.e. less than 2.5 kg, which constitutes 55.93% in group I (Pritchard's regime) and 65% in group II indicating increased incidence of low birth weight babies in hypertensive disorders of pregnancy. The majority of newborn cases were in the above 7 Apgar score in 38 (75.55%) of cases in group I (Pritchard's regimen) and 40 (76.92%) in group II (low-dose regimen) (Table 3).

In the present study, NICU admissions is done in 33 (67.34%) of cases in group I (Pritchard's regimen) and 39 (75%) of cases in group II (low-dose regimen). Low birth weight is the most common indication for NICU admission in both groups, which constitutes 13 (48.14%) in group I (Pritchard's regimen) and 11 (52.38%) in group II (low-dose regimen) (Table 4). Perinatal mortality in group I (Pritchard's regimen) was 33.89% and in group II (low-dose regimen) was 30%. The mean serum magnesium levels in group I (Pritchard regimen) was 4.1 mg/dL and in group II (low-dose regimen) was 3.525 mg/dL. There was increased morbidity due to gluteal abscess in group I (Pritchard's regime), which is seen in 4 patients (6.33%) and there was no much difference in duration of hospital stay between the two regimes (Table 5).

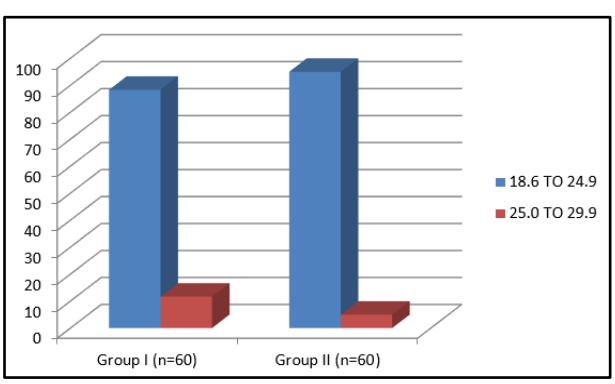

Figure 1. Body Mass Index (BMI) Wise Distribution of Cases

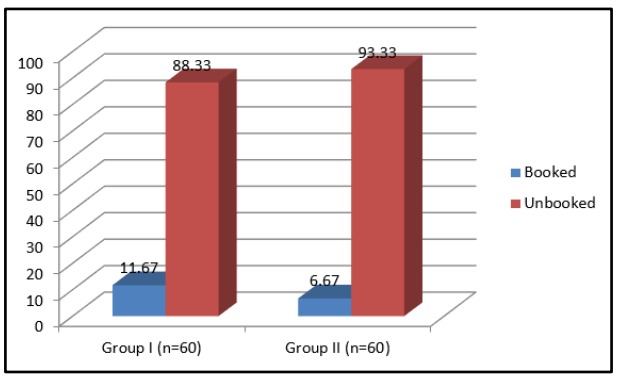

Figure 2. Booking Status of Cases

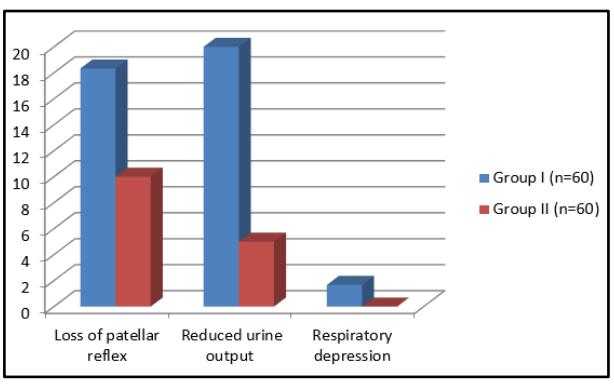

Figure 3. Study of Toxicity Profile in Two Groups

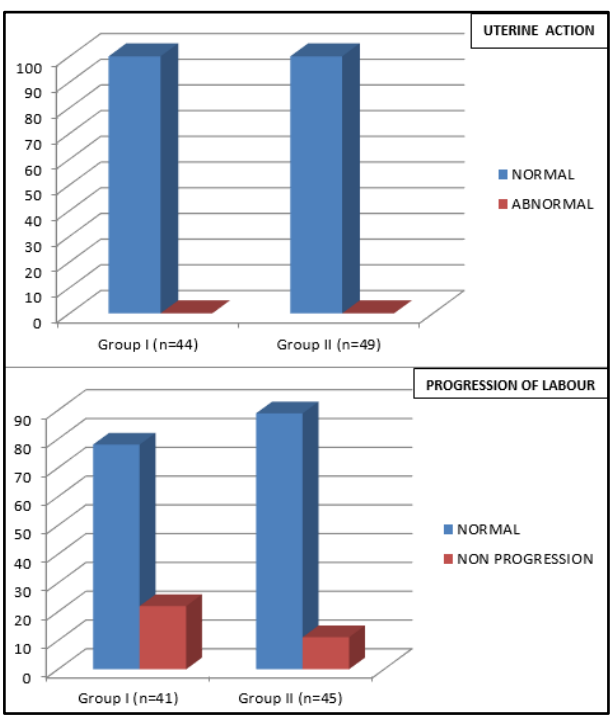

Figure 4. Study of Effect of Two Regimes on Uterine Action and Progression of Labour

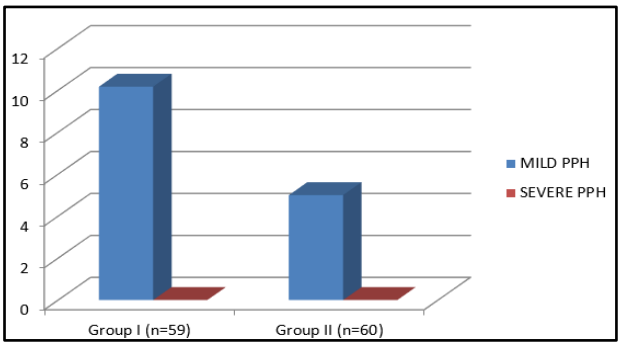

Figure 5. Study of Effect of Two Regimes on PPH

Parity	Group I, (n=60)	Group II, (n=60)	Total, (n=120)	%
Primi	40 (66.67%)	43 (71.67%)	83	69.16%
Second Gravidae	6 (10%)	8 (13.33%)	14	11.67%
Third Gravidae	11 (18.34%)	6 (10%)	17	14.16%
Fourth Gravidae or more	3 (5%)	3 (5%)	6	5%
Total	**60 (100%)**	**60 (100%)**	**120**	**100%**
Age (Years)	**Group I (n=60)**	**Group II, (n=60)**	**Total, (n=120)**	**%**
<20	18 (30%)	20 (33.33%)	38	31.67%
21-30	40 (66.66%)	39 (65%)	79	65.83%
31-35	2 (3.34%)	1 (1.67%)	3	2.5%
Total	**60 (100%)**	**60 (100%)**	**120**	**100%**
Mean age (years)	23.5	22.7		
POG (Weeks)	**Group I, n=60**	**Group II, n=60**	**Total, n=120**	**%**
<28	5 (8.33%)	4 (6.66%)	9	7.5%
29-31	3 (5%)	3 (5%)	6	5%
32-36	23 (38.33%)	19 (31.67%)	42	35%
37-41	29 (48.34%)	34 (56.67%)	63	52.5%
Total	**60 (100%)**	**60 (100%)**	**120**	**100%**
Mean POG (weeks)	35	36		

Table 1. Parity Wise, Age Wise and Gestation Wise Distribution of Cases

Control of Seizures	Group I, n=60	Group II, n=60
Controlled	60 (100%)	60 (100%)
Not controlled	0 (0%)	0 (0%)
Total	**60 (100%)**	**60 (100%)**
Cases	**Group I (n=60)**	**Group II (n=60)**
No recurrences	60 (100%)	57 (95%)
Recurrences seen	0 (0.0%)	3 (5%)
Total	60 (100%)	60 (100%)

Table 2. Study of Control of Seizures and Prevention of Recurrences in Two Groups

Foetal Heart Rate	Group I (n=49)	Group II (n=54)
Normal	44 (89.80%)	46 (85.19%)
Abnormal	5 (10.20%)	8 (14.81%)
Mode of Delivery	**Group I, (n=60)**	**Group II, (n=60)**
Normal	33 (55%)	36 (60%)
LSCS	26 (43.34%)	24 (40%)
Abortion	1 (1.67%)	0 (0%)
Birth Weight (kgs)	**Group I, (n=59)**	**Group II, (n=60)**
<1	5 (8.47%)	2 (3.34%)
1.01-2.5	33 (55.93%)	39 (65%)
2.51-4	22 (37.28%)	19 (31.66%)
Apgar Score	**Group I, (n=49)**	**Group II, (n=52)**
>7	38 (77.55%)	40 (76.92)
4-7	6 (12.24%)	11 (21.15%)
>4	5 (10.21%)	1 (1.93%)

Table 3. Study of Effect of Two Regimes on Foetal Heart Rate, Mode of Delivery, Birth Weight and Apgar Score at the Time of Delivery

NICU Referral	Group I, n=49	Group II, n=52
Not referred	33 (67.34%)	39 (75%)
Referred	27 (32.66%)	13 (25%)
Total	**49 (100%)**	**52 (100%)**
NICU Admissions	**Group I, n=27**	**Group II, n=21**
Meconium-stained liquor	2 (7.40%)	4 (19.04%)
Low birth weight	13 (48.14%)	11 (52.38%)
Prematurity	7 (25.92%)	4 (19.04%)
Low Apgar	3 (11.11%)	2 (9.52%)
Breech	1 (3.70%)	0 (0%)
Big baby (>4 kg)	1 (3.70%)	0 (0%)

Table 4. Study of NICU Referral and Indication for NICU Admission in Two Groups

Perinatal Mortality	Group I (n=59)	Group II (n=60)
IUD	10 (16.94%)	6 (10%)
Neonatal deaths	10 (16.94%)	10 (20%)
Stillbirth	0 (0%)	2 (3.34%)
Perinatal mortality	20 (33.89%)	18 (30%)
Maternal morbidity	Group I, n=60	Group II, n=60
Gluteal abscess	4 (6.33%)	2 (3.33%)
Duration of hospital stay (average number of days)	11	9

Table 5. Study of Perinatal Mortality and Maternal Morbidity in Two Groups

DISCUSSION

Out of 8817 deliveries in the present institute during the study period, 215 cases of eclampsia were reported. The incidence of eclampsia is 2.43%. The incidence of eclampsia in India is 0.179-5% on an average 1.5%. The higher of eclampsia in the present institute was due to higher number of referrals. A higher incidence of 9% and 5.2% of eclampsia was also found by Ekele et al and Begum et al, respectively.[3,4]

In the present study, 66.67% and 69.16% of patients were primigravida. In the study by Pritchard et al, Bangal et al and Sardesai et al in their studies observed 75%, 80% and 79%, respectively.[2,5,6] Maternal age of less than 20 years is the strong risk factor for eclampsia. In the present study, 31.66% of patients were less than 20 years. It is similar to the study by Bangal et al and Sardesai et al reported 44% and 46% of cases respectively below 20 years of age.[5,6] The mean gestational age of presentation in the present study in Pritchard's group is 35 weeks and 36 weeks in low-dose group. As eclampsia is a sequel to uncontrolled

and elevated blood pressure, therefore, regular antenatal check-ups, screening and treatment of eclampsia remains the key factor to prevent such morbidity. In the present study, 88.33% and 93.33% of unbooked cases were observed who received irregular or no antenatal check-ups at all. This was observed by Bangal et al, Ekele et al and Jana et al.[3,5,7]

Magnesium sulphate therapy for treatment of eclampsia has been recommended by World Health Organization (WHO) as the most effective and safe drug for prevention and control of seizures in eclampsia and is cited as one of the 56 essential evidence-based interventions that together could potentially eliminate the ultimate deaths of 3,58,000 women and 7.6 million children in low and middle income countries. Recently, magnesium sulphate has been included as one of the 13 essential commodities in the UN Commission on Essential Drugs for Maternal and Child Health.[1,8] Following publication of Collaborative Eclampsia Trail and Magpie Trail, magnesium[6] sulphate must be considered as the agent of choice as it controls and prevents recurrences of convulsions more effectively, reduces maternal and neonatal mortality and morbidity than diazepam and phenytoin.[9,10] Dr. J. A. Pritchard introduced magnesium sulphate for control of eclampsia and is used worldwide. Magnesium has a narrow therapeutic index leading to its concerns related to its toxicity. Experience with Pritchard's magnesium sulphate regimen for eclampsia showed multiple toxicity like respiratory, renal and neuromuscular dysfunction.[2,11] Adoption of this treatment in primary and secondary level hospital has been delayed due to the fear of toxicity of drug, which is related to high serum magnesium levels and can be life-threatening for mother. Previously, the collaborative group had concluded that there was compelling evidence in favour of MgSO4 for treatment of eclampsia, but it is seen that the health personnel are reluctant to administer it, instead prefer diazepam or phenytoin probably fearing potential toxicity due to standard dose of MgSO4. Timed management and transportation of these patients to hospital could prevent maternal and foetal catastrophe, if only the drug is given at peripheral health centres in a lower dose without fear.[9]

In India, various low-dose regimens have been described principally because of small size of Indian women and concern about toxicity in circumstances where facility for measurement of serum levels of magnesium is not available. In India, Pritchard's regimen has been modified in various places and found that low-dose regimen was as efficacious as standard regimen in convulsion control with less of magnesium toxicity, but neither a long-term statistical data has been reported nor standardisation of protocol has been framed. In the present study, low-dose regimen (Dhaka regimen) was compared with standard Pritchard regimen.

In the present study, low-dose magnesium sulphate was enough to control eclamptic convulsions in 95% of cases. Three patients had recurrence of convulsions with the serum magnesium levels of 3.5 mg/dL, 3.2 mg/dL and 3.2 mg/dL, which lies within therapeutic range.

Recurrence convulsion rate in various Indian studies using low-dose regimen is reported in the range of 5 to 10%. Studies using single loading dose of magnesium sulphate also observed recurrence convulsion ranging 7.4%-15%, which is higher than low dose or standard dose groups, thus supporting the requirement of maintenance dose of magnesium sulphate in eclampsia.[12]

The total dose of magnesium sulphate required to control seizures in low-dose magnesium sulphate was less than 30 grams, i.e. 42.3% less than used in standard Pritchard's regimen.

There was one case of maternal mortality in Pritchard regimen of magnesium sulphate due to hypertensive encephalopathy with aspiration pneumonitis. Pritchard, Seth et al and collaborative eclampsia trial reported maternal mortality to be 0.4%, 7.6% and 2.6-3.8%, respectively.[2,10,13] Maternal mortality in study by Sardesai et al, Begum et al using low-dose magnesium sulphate regimen was 2.63% and nil, respectively.[4,6] In the present study, one patient (1.67%) had serious respiratory depression. The earliest sign of magnesium toxicity is loss of patellar reflex, which is followed by respiratory failure and cardiac arrhythmias at higher levels. So, clinical monitoring for patellar reflex is necessary to prevent respiratory depression. In the present study, loss of patellar reflexes was seen in 18.33% in Pritchard's group and 10% of patients in low-dose group. In the low-dose magnesium sulphate regimen by Begum et al, Mahajan et al, maintenance dose was omitted in 9% and 41%, respectively due to loss of patellar reflexes.[4,14] Study by Shilva and colleagues showed loss of patellar reflex was 8% and 32% in low dose and standard dose groups, respectively. In the present study, 38.33% of patients in Pritchard's group and 15% of patients in low-dose group, the dose was omitted due to loss of patellar reflex and oliguria. In the study by Shilva and colleagues, 12% patient in low-dose group and 52% of patients in standard dose group, maintenance dose was omitted.[15]

Therapeutic ranges of serum magnesium by some authors recommend 4.8 to 8.4 mg/dL, while Pritchard described as being 2 to 3.5 mmol/L.[1] The mean serum magnesium level in the present study was 3.5 mg/dL in low-dose group and 4.1 mg/dL in Pritchard's group, which were in the therapeutic range. Magnesium levels obtained in low-dose regimen used by Begum et al[9] and Bangal et al[8] was 2.1 to 6 mg/dL and 4.16-4.38 mEq/L, respectively.[4,5] In the study by Shilva[12] and colleagues, range of magnesium sulphate was 2.08 to 3.69 mg/dL in low-dose group and 2.0 to 4.3 mg/dL in standard group.[15]

In standard dose group, 8 hours (mean) after loading dose, oliguria developed in 20% of patients at the serum magnesium levels of 3.5 mg/dL. In the low-dose group, 12 hours (mean) after the loading dose oliguria developed in 5% of patients at the serum magnesium levels of 3 mg/dL. Serum magnesium levels were within therapeutic levels at the time of oliguria. In Mahajan and colleagues study, using low-dose magnesium sulphate regimen, 3 patients developed oliguria.[14]

In standard dose group, 10 hours (mean) after the loading dose DTR were lost at the serum magnesium levels of 4 mg/dL. In the low-dose regimen group, 14 hours (mean) after the loading dose DTR were lost at the serum magnesium levels of 3.5 mg/dL. The earliest sign of magnesium sulphate toxicity is loss of DTR, were lost at the serum levels of >8 mg/dL. In the present study, loss of DTR was noticed at the level to produce much below to produce toxicity and this could be explained by higher sensitivity of low BMI women to magnesium sulphate toxicity. A study from Thailand suggest that clinical assessment of DTR, respirations and urine output is adequate to monitor magnesium toxicity without the need to determine the actual maternal serum levels.[6] In the study by Begum and colleagues, mean time after the loading dose at which DTR was lost was 11 hours at the serum Mg2+ levels of 3.42 mg/dL.[4] There was one case of respiratory depression in standard dose group noticed 10 hours after loading dose at the S.Mg2+ of 10 mg/dL for which magnesium sulphate dose was omitted and 1 gm calcium gluconate was given slow IV and ventilated.

Definitive treatment of eclampsia and imminent eclampsia is termination of pregnancy.[11,16] After assessing the case for cervical changes and obstetric indications, elective caesarean section was done in 12 patients in standard dose group and 14 patients in low-dose group. Emergency caesarean section was done in 17 patients in each low-dose group and standard dose group. The most common indication was meconium-stained liquor in low-dose group and no progression of labour in standard dose group. Most of the patients delivered vaginally, 55% in standard dose group and 60% in low-dose group. Caesarean section rate in collaborative eclampsia trail was 66% to 72% using standard Pritchard's regimen. Caesarean section rate reported by Begum and colleagues, Mahajan et al and Sardesai et al using low-dose study was 84%, 66%, 13%, respectively.[4,6,14] Mild atonic PPH was observed in 6 (10%) patients in standard dose group and 3 (5%) of patients in low-dose group maybe due to uterine relaxation effect of magnesium or abnormal coagulation associated with hypertension.

In the present study, normal foetal heart rate was observed in 89.80% of patents in standard dose group and 85.18% of patients in low-dose group. 5 patients (10.20%) in standard dose group and 8 patients (14.81%) in low-dose group mostly due to meconium-stained liquor causing bradycardia due to uterine contraction as such magnesium sulphate does not cause foetal distress.

Neonatal outcome depends on severity of IUGR (Intrauterine Growth Restriction), gestational age, birth weight and level of facility in NICU.[17,18,19] In the present study, 55.93% in standard dose group and 65% in low-dose group have low birth weight babies weighing <2.5 kg, even though 48.34% and 56.67% of patients are above 37 weeks POG indicating high incidence of IUGR in hypertensive disorders of pregnancy. Two cases of stillbirth observed in low-dose regimen group. NICU referral was done in 32.66% of babies in standard dose regime and 25% of babies in low dose regimen, the most common indication being IUGR and prematurity. The perinatal mortality rate was 33.89% in standard dose group and 30% in low-dose group in the present study. Collaborative eclampsia trail using standard dose regimen found perinatal mortality rate of 24%-26%. The various studies using low-dose regime in India observed perinatal mortality rate of 24.9% and 33% in Joshi et al and Bangal V et al, respectively.[5,20]

CONCLUSION

Early antenatal registration and regular antenatal check-ups plays a key role in the early detection and prevention of eclampsia. The dose required for control of convulsions was less than the half of standard Pritchard regimen. Low-dose magnesium sulphate is effective in controlling convulsions in eclampsia and for recurrence convulsions after therapy could be controlled by additional 2 gm (20% solution) MgSO4 intravenously. This regimen is highly suitable for use in Indian women who are known to have low BMI. With a favourable toxicity profile and efficacy comparable to Pritchard's regimen, low-dose MgSO4 can be adopted at Primary Health Centre and Rural Hospitals in India without involving much manpower.

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