The Professional Medical Journal
www.theprofesional.com

ORIGINAL PROF-2391

ECLAMPTIC PATIENTS;

EFFECTS OF MAGNESIUM SULPHATE AS ANTI CONVULSANT ON MATERNAL CONDITIONS

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Article received on:
18/11/2013
Accepted for Publication:
25/03/2014
Received after proof reading:
27/05/2014

ABSTRACT... Objective: To compare the frequency of fits in the eclamptic patients before and after use of magnesium sulphate as anticonvulsant and enlist the complications of MgSo4. **Subjects & methods:** All the patients with more than 20 weeks, of gestational age, with any parity were includes in the study. Patients developed fits before giving magnesium sulphate and after were evaluated, all the patients were monitored for occurrence of complications due to drug. Magnesium sulphate administered for 24 hours after last fit of delivery and patient's blood pressure, pulse, respiratory rate tendon reflexes and urine output was monitored half hourly. **Results:** Mostly fits were noted in the patients before the treatment of magnesium sulphate and 1 to 3 fits were noted in the 57.1% of the cases, 28.5% patients were seen with 4 to 6 numbers of the fits while more than 6 fits were noted in the 14.2% of the cases, and after the treatment (use of magnesium sulphate) 1 to 3 fits were seen in the 5.7% of the cases, 4 to 6 fits were only in the 2.8% of the cases while no any patient was noted with above 6 fits. Proteinuria was present in the 80% of the cases and edema was found in the 42% of the patients **Conclusions:** In the conclusion of our study MgSO4 found to be very effective and cheap for control of fits and has lower risk of recurrent convulsion.

Key words: Eclampsia, Maternal mortality, MgSo4

Article Citation: Kadri F, Khan NH, Shaheen S, Saeed M. Eclamptic patients; maternal condition in its receiving magnesium sulphate as anti convulsant. Professional Med J 2014;21(3): 427-431.

INTRODUCTION

Eclampsia is defined as the development of convulsions and/or unexplained coma during pregnancy or postpartum in patients with signs and symptoms of preeclampsia. In the US, pre eclampsia is the third leading cause of maternal mortality, accounting for 54 of 540 maternal deaths in 2004, behind only embolism and hemorrhage[1]. Eclampsia is rare in the Europe, with 2 to 3 cases reported per 10,000 births[2] in the developing countries, eclampsia is more common, with the with the incidence estimated as 16-69 cases per 10,000 births[3]. Although rare, eclampsia accounts for more than 50,000 maternal deaths each year[4]. Overall 10% - 15% of direct maternal deaths are associated with pre eclampsia and the eclampsia in low and middle income countries[4,5]. Risk factors for eclampsia include a family history, little or no antenatal care, being less than 20 years old, having had four or more previous pregnancies, and two or more signs and symptoms of imminent eclampsia (such as headache, epigastric pain, hyperreflexia, visual disturbances and severe hypertension). In low- and middle-income countries, the majority (around 90%) of women with eclampsia have had limited access to care[6].

Current strategies for prevention of pre-eclampsia can be broadly classified as antenatal surveillance, modification of lifestyle, nutritional supplementation, and pharmacological therapy. Cochrane reviews of strategies for preventing pre-eclampsia include: lifestyle advice, such as altered dietary salt[7] and exercise;[8] the use of nutritional supplementation, such as calcium,[9] magnesium, zinc,[10] marine oils (Makrides 2006), vitamins C and E,[11] and pharmacologic agents such as antiplatelet agents and nitric oxide[12,13]. Once women have pre

eclampsia, a Cochrane Review now provides robust evidence that magnesium sulphate halves the risk of eclampsia and probably reduces the risk of maternal death[14]. The calcium antagonist activity of magnesium sulphate has led to the belief that it also lowers systemic blood pressure, but this has not been supported by evidence from randomised trials[15]. Magnesium sulphate does not appear to be an antihypertensive drug[16]. In this study the magnesium sulphate used for control of convulsion. This is the kind of salt that is used worldwide as anticonvulsant successfully. It is proved more effective for control of convulsion as compared to other available anticonvulsant (valium, phyentoin). MgSo4 is easily available and administrable and simple to monitor its side effects. Therefore rational of my study was to assess the effectiveness of MgSo4 for control of fits.

MATERIAL AND METHODS

This interventional Quasi experimental study was contains 35 cases and was conducted at Dow medical college lyari General hospital Karachi. All the eclamptic patients whether booked and unbooked or referred admitted throughout OPD (outpatient department) or emergency in the obstetrics and gynecology unit of Dow medical college. All the pregnant women with more than 20 weeks, of gestational age, with any parity and with the history of convulsion in the delivered or undelivered patients were includes in the study. All the patients having respiratory rate less than 16 breaths per mint, knee jerk (depressed or absent) and with the history of renal failure were excluded from the study. All the information was collected by using Performa filled by trainee RMO. Number of the patients developed fits before giving magnesium sulphate and number of the patients, developed fits after giving magnesium sulphate, was evaluated, all the patients were monitored for occurrence of complications due to drug. Magnesium sulphate administered for 24 hours after last fit of delivery and patient's blood pressure, pulse, respiratory rate tendon reflexes and urine output was monitored half hourly. The entire equitable laboratory Investigations were done, CT scan in the cases of cerebrovascular accident and retinoscopy was done in the patients having visual symptoms. Magnesium sulphate was intravenously used for the management of women with severe pre eclampsia significantly reduced for the development of eclampsia. Data was analyzed on SPSS program version 16.0.

RESULTS

During the study period total number of obstetrical admission were 35 patients were diagnosed as having eclampsia. In the present study majority of eclampsia were found in unbooked patients 57% while booked patients and referred were 14.2% and 28.5% respectively, according to the parity mostly primigravida patients were noted with the percentage of 51% and multigravid patients were found 42.8% while grand multigravid patients were seen only 5.7%, eclamptic patients were seen 51.4% with gestational age above the 37 weeks 22.8% were with 33 t0 36 weeks 11.42% were seen with 28 to 32 weeks with gestational age. Family history was present only in the 5.71% of the patients. Table-I

When blood pressure was noted in of the patients before and after uses of magnesium sulphate the systolic blood pressure was noted with mean± standard deviation before 166.74 ±23.98 and after 128.17 ±10.20, while similarly diastolic blood pressure was before 106.8 ±17.19 and after 86.29 ± 6.897. Table-II.

Mostly fits were noted in the patients before the treatment of magnesium sulphate 1 to 3 fits were noted in the 57.1% of the cases, 28.5% patients were seen with 4 to 6 numbers of the fits while more than 6 fits were noted in the 14.2% of the cases, and after the treatment (use of magnesium sulphate) 1 to 3 fits were seen in the 5.7% of the cases, 4 to 6 fits were only in the 2.8% of the cases while no patient was noted with more than 6 fits. Table-III.

On the basis of maternal mortality and outcome after treatment, complications were noted as 2.9% of the cases with renal failure, 2.9 patients with hypotension, as maternal mortality, 2.9% patients were died and large number of the cases were

survived with the percentage of 97.1%, according to perinatal mortality IUD were 5.7% FSB were 11.4% and 82.9% were alive. Table-IV.

Characteristics	Frequency	%
Booking status		
Booked	05	14.2%
Unbooked	20	57.0%
Referred	10	28.5%
Parity		
Perimigravida	18	51.4%
Multigravida	15	42.8%
Grand multigravida	02	05.7%
Pregnancy		
Single	33	94.28%
Twins	02	5.7%
G. age (weeks)	04	11.42%
28 – 32	08	22.8%
33 – 36	18	51.4%
> 37		
Family history	02	5.71%

Table-I. Baseline characteristics of the patients (n=35)

Blood pressure (BP)	Before	After	p-value
	Mean ±st.deviation	**Mean ±st.deviation**	
SBP	166.74±23.98	128.17±10.20	0.0001
DBP	106.8±17.19	86.29± 6.897	0.0001

Table-II. Comparison of the blood pressure before and after antihypertensive therapy.

No. of Fits	No. of the patients	%
Before		
1 – 3	20	57.1%
4 – 6	10	28.5%
More than 6	05	14.2%
After		
1 - 3	02	5.7%
4 – 6	01	2.8%
More than 6	00	0.0%

Table-III. Fits before and after administration of MgSo4.

Outcome	%
Complications	
Renal failure	2.9%
Hypotension	2.9%
Edema	42.0%
Maternal mortality	
Death	2.9%
Survived	97.1%
Perinatal mortality	
IUD	5.7%
FSB	11.4%
ALIVE	82.9%

Table-IV. Maternal mortality and outcome.

DISCUSSION

During the study period total number of obstetrical admission were 35 patients were diagnosed as having eclampsia. In the present study majority of eclampsia were found in unbooked patients 57% while booked patients and referred were 14.2% and 28.5% respectively, mostly primigravida patients were noted with the percentage of 51% and multigravid patients were found 42.8% while grand multigravid patients were seen only 5.7%, in the study of Orji E. et al were found similar results[17]. A study eclampstic patients from Kuwait was shows similar result and also reported gestational age which is comparable to the gestational age of our study,[18] as 51.4% with gestational age above the 37 weeks, 22.8% were with 33 t0 36 weeks and 11.42% of the patients were seen with 28 to 32 weeks with gestational age in this study. in the study of Xu xiong, reported that 62.1% of the babies delivered after 37 weeks of the mothers with preeclampsia[19]. Another study from Pakistan shows gestational age of the eclampstic patients 86.30% with 37 to 40 weeks, 10.95% with 40 to 42 weeks and before 24 weeks in only 2.73% of patients, and family history reported only in 1.36% of cases[20]. In the present study family history was present in the 5.71% of the patients.

In this study blood pressure was noted in of the patients before and after uses of magnesium sulphate the systolic blood pressure was noted with mean± standard deviation before 166.74 ±23.98 and after 128.17 ±10.20, while similarly

diastolic blood pressure was before 106.8 ±17.19 and after 86.29 ± 6.897. In the above mentioned study systolic and diastolic blood pressure reported at time of admission as, mean±st. deviation 106.68±13.838, 69.86±6.769.[20] In the study of Almas Tabassum et al. Mean of systolic blood pressure was 159.86 mmHg (SD±27.93) and mean diastolic Blood pressure was found to be 109.90 (SD ±14.59)[21] .

According to this study magnesium sulphate performed important role in the prevention of fits, before the administration of magnesium sulphate 1 to 3 fits were seen in the 57.1% of the cases, 28.5% patients were with 4 to 6 numbers of the fits while more than 6 fits in the 14.2% of the cases, and after the treatment (use of magnesium sulphate) 1 to 3 fits were seen in the 5.7% of the cases, 4 to 6 fits were only in the 2.8% of the cases while no patient was noted with more than 6 fits. Omu et al evaluated use of magnesium sulphate treatment in patients with severe preeclampsia and concluded that magnesium sulphate was effective in preventing recurrence of eclamptic fits[22].

In the present study maternal mortality and outcome after treatment, complications were noted as 2.9% of the cases with renal failure, 2.9patients with hypotension while 88.5% patients were seen without any complication, as maternal mortality, 2.9% patients were died and large number of the cases were survived with the percentage of 97.1%, according to perinatal mortality IUD were 5.7% FSB were 11.4% and 82.9% were alive. Similar were found in the study of Karachi Pakistan[23].

CONCLUSIONS

In the conclusion of our study MgSO4 found to be very effective and cheap for control of fits and has lower risk of recurrent convulsion. The occurrence of drug complications was very rare with standard protocol. The only one maternal mortality occurred due to cardiopulmonary arrest. The clinical monitoring seems to be sufficient in this trail.

ACKNOWLEDGMENT

Authors acknowledge Dr. Muhammad Saeed Arain for their statistical analysis and other technical help according to guidelines.

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