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MGSO4 AS ANTICONULSANT OF CHOICE IN ECLAMPSIA

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ABSTRACT:

OBJECTIVE: *To determine the frequency of eclampsia and to evaluate the use of Mg SO4 as an anticonvulsant agent for control of fits and prevention of their recurrence .*
DESIGN : *A descriptive (case series) study .*
PLACE AND DURATION OF STUDY : *This study was carried out at Department of Obstetric and Gynaecological liaquat University Hospital (LUH) Hyderabad, from Jan –Dec 2007 .*
PATIENTS AND METHODS : *During the study period Mg SO4 was given to 29 eclamptic women according to set protocol for its use . The recurrence of fits, side effects, maternal and fetal outcome were recorded in a pre-designed proforma . Data gathered was entered and analysed by SPSS version 14.*
RESULTS : *Out of 3327 patients 29 (0.87) had eclampsia . Majority of women were young between 21-29 years of age (68.96%) , primigravida (48.2%) and with duration of pregnancy <35 weeks (41.37%) . Caesarean section was performed in (58.6%), 20 (90.9%) delivered live babies while 2 (9.0%) had still birth . Mg SO4 was effective in all patients for control of fits except for 2 patients had recurrent convulsions. One patient had pulmonary oedema and died .*
CONCLUSION : *Mg SO4 was found as a safe and effective anticonvulsant in controlling eclamptic fits, to prevent recurrence of futher fits, the only thing is clinical monitoring of patients for side effects.*

KEY WORDS : MgSO4 , Eclampsia , Convulsion . Anticonvulsant.

INTRODUCTION :

Eclampsia is an unpredictable multiorgan disorder unique to human pregnancies resulting from reduced organ perfusion due to vasospasm and activation of the coagulation cascade affecting organs / systems. Nervous system is commonly affected and is the cause of significant morbidity and death in these women. [1]

Prevalence varies widely over the globe according to standard of living . It is 5-7 / 10,000 deliveries in U.S while in developing nations it rangesfrom 1 /100 pregnancies to 1/1700 pregnancies.[2]

Pre- eclampsia and eclampsia account for about 9% maternal deaths in Africa and Asia and about one - quarter of maternal death in Latin Amrica and the Caribbean. [3]

The control of eclamptic fits and prevention of recurrent seizures is an essential aspect of management . As early as 1906 magnesium sulfate was injected intrathecally to prevent eclamptic seizures [4] , intramuscular magnesium was used in 1926 [5] and in 1933 the drug was given intravenously [6] for first time to control them and since then it is being variably used as an anticonvulsant agent of choice alternative to other drugs like diazepam and phenytoin . The international collaborative eclampsia trial confirmed that this anticonvulsant is indeed more effective , and safer than these alternative drugs . [7]

Present study aims to determine the frequency of eclampsia and to evaluate the use of magnesium sulphate as an anticonvulsant in the management of eclamptic patients in our setting , its efficacy , safety , recurrence of convulsion

and fetomaternal outcome .

PATIENTS AND METHODS :

This descriptive study was carried out from January to December 2007 on women who presented with eclampsia at the department of Obstetric and Gynaecological Liaquat University Hospital Hyderabad, which is a public sector, tertiary care hospital . Over 1 year study period, out of 3327 patients 29 were admitted with eclampsia .

All these patients were offered emergency measures including intravenous line, clearance of air way, antihypertensive therapy to control hypertensive peaks and magnesium sulphate as anticonvulsant according to the set protocol for its use.

All booked, unbooked cases of eclampsia were included . Patients with urine output less than 30ml per hour were excluded from the study . Laboratory investigations like complete blood picture with haematocrit, platelet count, urine detailed report, renal and liver function tests, coagulation profile and serum electrolytes were performed.

Magnesium sulphate was given as bolus dose of 4gm (8cc) in 12 cc distilled water as 20% solution intravenously over 15-20 minutes . Maintenance dose of 1gm per hour was given and continued for 24hours after the last fit. Monitoring was done by hourly recording of repiratory rate, urine output and patellar reflexes.

Mode of delivery was decided according to the condition of patient and obstetric indication .

A pre -designed proforma was used to record the information regarding demographic and reproductive parameters of patients including age, parity, booking status , gestational age and distribution of eclampsia . The data collected was entered and analysed on SPSS Version 14. Mean and frequencies were measured.

RESULTS :

The total obstetric admission during the study period were 3327, 29 .(0.87%) of these had eclampsia . Age range of patients was 18-42 years with mean age of 27.27 years. As shown in Table I. All these eclamptic patients were the referred cases, and majority were unbooked only 4 were booked with some primary or secondary health care levels or at local clinics.

Regarding parity of patients , majority 14 (48.27%) were nullipara . Parity ranges from 0 - 7 . As shown in Table II .

18 (62%) women had fits during antanatal period while 2 (6.89%) and 7 (24.1%) had fits during delivery and postpartum period respectively . 2 patients had fits both before and after delivering. As shown in Table III.

Regarding gestational age twelve (41.37%) patients had pregnancy < 35 weeks , 8 patients presented with fits while their pregnancy was >35 weeks . Seventeen (58.6%) patients were delivered by caesarian section, of which 16 (55.1%) were carried out at our institute due to eclampsia, while one patient had casearian section due to contracted pelvis at private clinic. 12 (41.3%) patients were delivered vaginally, 6 at our institute and 5 at home by dai and one at private clinic . All those 7 patients who delivered outside the institute were admitted due to postpartum eclampsia.

Twenty (90.9%) women had alive babies with apgar score > 7 in 17 (77. 2%) and < 6 (13.6%) in 3 babies at 1 minute, while 2 (9.0%) were still births and 2 neonatal death .

Magnesium sulphate effectively controlled fits in all eclamptic women except for two patients (6.8%), who had recurrent convulsions . One patient developed pulmonary oedema and died due to it.

TABLE I

Age of patients	Number	Percentage
<20 Years	3	10.34%
21-29 Years	20	68.96%
30-39 Years	5	17.24%
40 & >40 Years	1	3.44%

TABLE II

Parity Status	Number	Percentage
P 0 (nullipara)	14	48.27%
P1+0	6	20.68%
P2-5(multigravida)	7	24.13%
P>5 (Grand mutipara)	2	6.89%

TABLE III

Distribution of eclampsia	Number	Percentage
Antepartum	18	62%
Intrapartum	2	6.89%
Postpartum	7	24.1%
Intrapartum+ Postpartum	2	6.89%

DISCUSSION :

Hypertensive disorders of pregnancy remains one of the major causes of maternal and perinatal death, eclampsia accounts for approximately 50,000 maternal deaths annually world wide . [8]

In this study 0.87% patients presented with eclampsia similar figures are reported from Karachi [9] while Shaheen from Peshawar reported an incidence of 1.2% [10], relatively higher incidence (2.2%) is reported from Lahore .[11]

Booking and antenatal care remains the corner stone for prevention of severe forms of pre- eclampsia and hence eclampsia . Most of our women never received antenatal care and were unbooked similar to many other studies reported from different parts of the country [9-10] .

Regarding parity out of 29 , 14 (48.21%) were primigravida of age between 21-29 years (68.96%) , similar results reported in literature . [12] . Majority 18 (62%) patients had eclamptic convulsions before delivery between 28-38 weeks of gestational age , while 7patients (24.1%) had eclamptic convulsions after delivery , similar results reported by Mussart from Peshawar, 36 (60%) and 14 (23.3%) patients has fits in antepartum and postpartum period respectively . [12]

Sixteen patients were delivered by C. section due to eclampsia, and Six were delivered vaginally at our hospital . 20 women had alive babies while 2 were still births .

All women received MgSo4 as an anticonvulsant agent and were monitored clinically as they remain well concious during therapy and none of them had serum magnesium levels done as it has been shown in the literature that Mg So4 toxicity can appropriately be monitored clinically [13-14] and not necessarily by serum levels .

Fits were well controlled with MgSo4 in 27 (93.1%) patients, while 2 (6.8%) patients had recurrence of fits, similar results reported in study from Karachi [9]

Almost a decade ago diazepam and lytic cocktail infusion were used in eclamptic women in our setup as MgSo4 was not available . But after its free and easy availability it being used as a anticonvulsant of choice . Research also favours its effectiveness in comparision to Diazepam [15] , phenytoin [16] or lytic cocktail [17] and is found better than these agents in preventing recurrence of further fits [16].

Newer studies are therefore emerging to develop an effective regimen with minimum dose and shorter duration of therapy so as to be cost effective also also. A low dose (Dhaka) [18] and ultrashort [19] MgSo4 regimens were established to half the standard sufficient to control the convulsions effectively. Up till now it is only being used at the tertiary care hospital where there is adequate manpower , facilities and supervision which remains a challenge at district hospitals and primary health care centers .We recommend the its use should be encouraged at secondary health care facilities .

CONCLUSION :

The present study showed that MgSo4 is a safe and effective anticonvulsant agent for eclamptic patients.

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