COMPARISON OF LABOUR PATTERN AND FOETAL OUTCOME IN ECLAMPSIA USING PARENTERAL MAGNESIUM SULPHATE AND LYTIC COCKTAIL THERAPY

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SUMMARY

A carefully supervised study of labour pattern and foetal outcome was done in 100 cases of eclampsia, 50 each allocated to parenteral Magnesium Sulphate therapy and the traditional Lytic cocktail therapy. No statistically significant difference was observed in the labour pattern and outcome in the two groups. However, a marked eduction in the PNMR was noted with parenteral magnesium sulphate therapy thus confirming the superiority of this regime.

INTRODUCTION

The incidence of eclampsia though on decline remains a major obstetric problem even today especially in the developing countries often taking its toll of the mother and the foetus. In India lytic cocktail therapy has been in use over the last 2 decades while in the West parenteral magnesium sulphate therapy has taken the lead over lytic cocktail therapy and other regimens in the management of eclampsia. Foetal salvage has been reported to be better with magnesium sulphate (MgSO4) treated patients as compared to lytic cocktail therapy (Bhat and Barfiwalla, 1985;Nagar et al, 1988). The present study was undertaken to assess the labour pattern, mode of delivery and foetal outcome in both the groups.

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MATERIAL AND METHODS

In the present study, 50 patients of eclampsia, taken at random were allocated to each of the two treatment groups. Group I patients were put on parenteral MgSO4 (Pritchard and Pritchard, 1975) and group II on Lytic Cocktail therapy (Menon, 1961), For diastolic blood pressure of more than 110 mm of Hg, Capsule Nifedipine sub-lingual 10 mg was given as and when required.

On admission, a detailed history and a thorough general physical and local examination was carried out. Routine investigations (Haemoglobin, urine C/E, blood urea, serum

creatinine, serum uric acid, ABORh group) were carried out and input output chart was maintained.

The patients who were not in labour were induced after 6 hours of start of treatment with ARM and oxytocin drip by titration method. For patients who were already in labour, it was augmented by ARM and/or oxytocin drip, Labour pattern, mode of delivery and perinatal outcome was noted in both the groups.

RESULTS

In the present study, 5 patients died before delivery while 9 had delivered at home. Out of the 86 cases delivered in the hospital, 40% in group I and 31.7% in group II did not require any induction or augmentation delivered spontaneously as shown in Table I.

Induction delivery interval (IDI) and the initial Bishop score in both groups is shown in Table II.

As is clear from Table III, induction delivery interval (IDI) was slightly longer in MgSO4 group as compared to Lytic cocktail group, though the initial Bishop score was slightly higher in group I. The difference, however, was not statistically significant ($p > 0.05$).

Similar to induction delivery interval, augmentation delivery interval (ADI) was also a little longer in group I as compared to group II inspite of the similar initial Bishop score as shown in Table III.

It is clear from Table IV that in group I vaginal delivery was achieved in 97.7% of cases as compared to 87.8% of cases in group II. LSCS was done in 2.2% of cases in MgSO4 group only for obstetrical indications (Previous LSCS). In group II< 2 LSCS were done for uncontrolled fits, one for accidental haemorrhage - indications directly related to

TABLE I
Labour pattern in two groups

	Group I (Mgso4) 45	Group II (Iytic cooktail) 41	`P' Value if significant
Spontaneous onset of labour :			
No induction or augmentation required (Spontaneous delivery)	40%	31.7%	Not significant
Required augmentation	24.4%	21.9%	"
Induced with ARM and oxytocin	33.3%	34.1%	"
LSCS : Failed induction	-	-	"
Uncontrolled fits	-	4.8%	"
APH	-	2.4%	"
Obstetrical indication	2.2%	4.8%	"

TABLE II
Bishop score and induction delivery interval (IDI) in two groups

	Group I (MgSo4)	Group II (lytic cocktail)
Bishop's score	5.08 + 1.4	3.9 + 1.89
Induction delivery interval (IDI)	10.92 + 3.01 (P 0.05)	9.87 + 2.5

TABLE III
Augmentation delivery interval in the two groups

	Group I (MgSo4)	Group II (Lytic Cocktail)
Bishop's score	7.4 + 0.86	7.5 + 0.86
ADI	4.22 + 1.39 (P 0.05)	2.97 + 1.13

TABLE IV
Mode of delivery in the groups

	Group I (MgSo4) n = 45	Group II (Lytic Cocktail) n = 41
Vaginal:	97.7%	87.8%
(I) Cephalic :		
a) Spontaneous	68.8%	60.9%
b) Outlet forceps	15.5%	19.5%
c) Mid cavity forceps	4.4%	2.42%
d) Craniotamy	2.2%	0%
(II) Breech	6.6%	4.8%
Abdominal LSCS	2.2%	12.1%

eclampsia and 2 LSCS were required for obstetrical indications.

Perinatal Outcome

Comparing the perinatal mortality in both groups, it was seen that PNMR was higher in group II as compared to group I (31.58%) in Lytic cocktails, 12.19% in MgSO4 group), the difference being statistically significant ($p < 0.05$). Prematurity accounted for 80.95% of all the perinatal death in the present study. However, when compared perinatal mortality in MgSO4 was markedly lower both in pre-term and term babies as shown in Table V.

TABLE V
PNMR in foetuses admitted with FHS positive at admission

	No. of Cases	Perinatal Mortality
Group I : Pre-term	24	29.16%
Term	17	0%
Group II : Pre-term	19	52.63%
Term	19	21.05%

TABLE VI
PNMR in relation to birth weight

Birth weight (gms)	Group I (MgSo4)		Group II Lytic Cocktail)	
	No. of cases	PNMR	No. of cases	PNMR
Less than 1000	2	100%	2	100%
1000-2000	16	31.2%	12	58.3%
More than 2000	23	0	24	20.7%

TABLE VII
Apgar score in babies at 5 minutes
(FHS positive at admission)

	No. of births	Apgar score		
		7-10	4-6	0-3
MgSo4	41	24 (58.5%)	10 (24.3%)	7 (17.09%)
Lytic Cocktail group	38	16 (42.1%)	12 (31.5%)	10 (26.3%)

In this study, the mean birth weight of the babies was 1979+- 431 gm in group I and 1991+-338 gms in group II. On comparing the PNMR in relation to the birth weight, it was seen that there was no perinatal death in babies with birth weight more than 2000 gm in MgSO4 group as compared to 20.7% PNMR in group II as shown in Table VI.

Apgar score at 5 minutes after birth was observed in babies born in the two treatment groups and on comparing, it was noted that Apgar scores were better in MgSO4 group than in Lytic cocktail group as shown in Table VII.

It is clear from Table VII that 82.9% of babies in group I had an Apgar of more than

3 at 5 minutes after birth and only 17.09% were severly asphyxiated with Apgar below 3 while in group II 26.3% of babies had an Apgar below 3.

DISCUSSION

On comparing the labour pattern in the induced or augmented labour in the two groups of eclampsia cases, an initial glance showed a longer duration of labour in group I eventhough the initial Bishop score was almost the same or slightly better. The difference, however, was not statistically significant. Magnesium sulphate does redce the uterine activity to some extent as it is reported to be used to arrest the pre-term labour (Petrie, 1981). The outcome of labour remained the same in both groups because the inhibitory action of Magnesium sulphate on uterine activity was counteracted by augmentation. Inspite of the reported longer duration of latent phase of labour because of heavy sedation (Koontz and Bishop, 1982), the lytic cocktail therapy resulted in shorter duration of labour in eclampsia cases.

Induction was successful in all the cases, both term as well as pre-term and no case of failed induction was noted. This is comparable to the observation made by Jain et al (1986).

The assisted vaginal delivery was required in less number of cases in group I because the patients were conscious and could co-operate while the heavy sedation of lytic cocktail led to a higher incidence of assisted vaginal delivery.

The caesarean section in group I was required only for obstetric indication while in group II, 3 LSCS were done for indications directly related to the eclamptic process thereby showing clearly the better control of the disease by parenteral magnesium sulphate.

PNMR in group I is reduced to less than half when compared to group II. The better foetal salvage was noticeable in pre-term babies in magnesium sulphate is probably responsible for good Apgar score in babies and significant improvement in the perinatal mortality.

It is suggested that parenteral magnesium sulphate therapy by reducing maternal complications, and increasing the uterine blood flow gives rise to markedly improved perinatal outcome. Almost nil depressant action on CNS is an added advantage for good labour outcome with magnesium sulphate while a little inhibitory action on uterine activity can be overcome by augmentation.

However, a stringent monitoring is required before administering every dose of magnesium sulphate with a careful watch over the signs of toxicity, along with a minor disadvantage of pain at injection site and abscess formation. Due to many advantages, on over all analysis, the use of magnesium sulphate therapy in eclampsia is recommended.

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