

## EVALUATION OF ANTICONVULSANT REGIMES IN ECLAMPSIA

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### SUMMARY

To find out which treatment regime ensure the best fetomaternal outcome in eclampsia, this study was undertaken in the department of Obstetrics & Gynaecology, S.C.B. Medical College Hospital, Cuttack with (1) Lytic-cocktail (Menon 1961), (2) Magnesium sulphate (Pritchard and Pritchard 1975), (3) Diazepam (Lean et al 1968) on 50, 42 and 24 cases respectively from July, 1987 to June, 1988. Nepresol (Hydrallazine 10 mg) was administered 8 hourly if diastolic pressure exceeded 110 mm of Hg. Frusemide (40 mg) IV was given in Pulmonary oedema or oliguria. The study re-affirms the superiority of Pritchard's magnesium sulphate therapy over Menon's lytic-cocktail and Lean's diazepam regime. Control of fits, reduction of maternal and perinatal mortality and morbidity were found to significantly improved with magnesium sulphate. As regards hypertension, diazepam therapy was found to have the best response and magnesium - sulphate therapy the least.

### Introduction

Hypertensive disorders of pregnancy particularly eclampsia, accounts for the third highest cause of maternal deaths and exorbitantly high perinatal mortality in India. Menon's (1961) lytic cocktail regime is being practised in most of our institutions inspite of the poor maternal and foetal outcome. Diazepam therapy introduced by Lean et al (1968) has also not shown promising results. Pritchard and Pritchard's (1975 and 1984) Magnesium sulphate therapy has been used by them since 1955 with 90% foetal salvage and a zero % maternal mortality. It was there-

fore decided to make a comparative study of the three regims with a view to find out the best regime with the facilities available at our Institution.

### Material and Methods

116 cases of Eclampsia admitted to S.C.B. Medical College Labour ward during the period July, 1987 to June, 1988 were included in the present study, of which 50 cases were treated with Lytic cocktail and 42 with Magnesium sulphate. Out of these 42 cases 3 received it after non-response to lytic-cocktail and 1 case after failure of diazepam regime. 24 cases received diazepam regime. The usual doses schedule were adopted as advocated by

the respective authors as follows (i) Lytic cocktail: (Menon, 1961) (ii) Magnesium Sulphate (Pritchard and Pritchard, 1975) (iii) Diazepam (Lean et al 1968). Hydralazine 10 mg was given if diastolic Blood pressure exceeded 110 mm of Hg and B.P. was recorded every half hourly. The drug was repeated 8 hourly. Frusemide (40 mg) I.V. was given in case of Pulmonary oedema or oliguria. The above regimes were given 24-48 hours depending on the condition of the patient.

### Observation

86% of the cases belonged to the low socio-economic group and 94.8% were unbooked. The mean age group was 22.6 years. 87.1% cases hailed from a rural habitat. 77.6% cases were primi parous, 34.0% cases were at more than 37 weeks gestation. 6.3% cases were at less than 28 weeks gestation.

Distribution of severe anaemia, severity of disease, absence of foetal heart sound at the time of admission and type of

eclampsia, is shown in Table I to highlight pre-existing morbid conditions that might contribute to maternal and perinatal outcome in the three treatment groups.

Incidence of complications like oliguria, coma, bedsore, psychoses, urinary tract infections, retinopathy were much higher in lytic cocktail group followed closely by the group receiving diazepam regime (Table II). However control of hypertension which was almost parallel in lytic cocktail and magnesium sulphate group was better and sustained in the diazepam regime.

The much greater percentage of early control of fits with Magsulf is shown in Table No.III where immediately (within 15 minutes) 90.5% of cases showed control of fits and the rest 9.5% were controlled by 8 hours of institution of therapy. Only 14% of lytic-cocktail group were controlled immediately although another 68% were controlled by 8 hours. Yet 14% were not controlled by 12 hours and 6% were not

TABLE - I  
PRE-EXISTING MORBID FACTORS IN CASES OF ECLAMPSIA DURING ADMISSION

Pre-existing morbid factors	Lytic Cocktail	Magnesium sulphate	Diazepam
	incidence in percentage		
Severe anaemia	4	2.4	8
Severity of the disease (Eden's criteria)			
Mild	70	60.9	60.3
Severe	30	39.1	39.7
Absence of FHS at the time of admission (excluding post-partum eclampsia)	25.6 (No.39)	12.8 (No.39)	41.1 (No.17)
Type of Eclampsia			
Antepartum	54	66.7	58.3
Intrapartum	24	26.2	12.5
Postpartum	22	7.1	29.2

TABLE - II  
MATERNAL MORBIDITIES ASSOCIATED WITH DIFFERENT TREATMENT GROUPS.

Morbidities in percentage	Lytic cocktail N = 50	Magnesium sulphate No.42	Diazepam No.24
Pyrexia	10.0	9.5	20.8
Aspiration pneumonia	2.0	2.4	0.0
Intracranial haemorrhage	2.0	2.4	4.2
Retinopathy	16.0	9.5	0.0
Oliguria	6.0	4.8	4.2
Icterus	0.0	0.0	4.2
Coma	6.0	2.4	8.3
Persistent Hypertension	12.0	14.4	8.3
Bedsore	4.0	0.0	0.0
Psychosis	16.0	2.4	8.3
Atonic PPH	4.0	2.4	4.2
Thrombophlebitis	2.0	0.0	0.0
Urinary tract Infection	8.0	4.8	8.3

TABLE - III  
CONTROLS OF FITS IN DIFFERENT REGIMES.

Hours of Therapy	Lytic-cocktail No.50		Magnesium sulphate No.42		Diazepam No.24	
	Percentage					
	Controlled.	Not Controlled.	Controlled.	Not Controlled.	Controlled.	Not Controlled.
Immediately (i.e. 1/4th hours)						
0 - 4 hours	14	86	90.5	9.5	29.2	60.8
4 - 8 hours	68	18	9.5	0.0	58.3	12.5
8 - 12 hours	4	14	-	-	8.3	0.0
> 12 hours	8	6	-	-	4.2	failure
	X <sup>2</sup> = 16.6		P < 0.05		<P 0.01	

controlled even after 24 hours of therapy. Diazepam group shows a better performance than lytic cocktail group although not quite so remarkable as magnesium sulphate.

Table IV shows how significantly early was the regain of consciousness in patients receiving magnesium sulphate

therapy when compared to those receiving lytic-cocktail (P<0.01) and diazepam (P<0.05).

Incidence of maternal deaths is obviously much higher (14%) in the lytic cocktail group followed closely by the group receiving diazepam (12.5%). The 3 deaths in Magnesium sulphate group (7.1%) were

TABLE - IV  
REGAIN OF CONCIIOUSNESS IN DIFFERENT REGIMES.

Time in hours after therapy	Lytic-cocktail N = 50		Magnesium sulphate N = 42		Diazepam N = 24	
	No.	%	No.	%	No.	%
0 - 12 hours	7	14.0	26	61.8	6	25.0
12 - 24 hours	19	38.0	14	33.3	9	37.5
> 24 hours	24	48.0	2	4.9	9	37.5
	$\chi^2 = 32.01$		P<0.01		P<0.05	

TABLE - V  
MATERNAL MORTALITY IN DIFFERENT REGIMES.

Incidence amongst all eclampsia cases admitted	Lytic cocktail No.50	Magsulph No.42	Diazepam No.24
Number	7	3	3
Percentage	14	7.1	12.5
	P = 0.05		P = 0.05

cases due to severity of the disease (2 had intracranial haemorrhage) and one had profound obstetric shock. (Table V).

Table VI illustrates the different causes of maternal deaths in the three groups. Table VII shows adverse effects of lytic cocktail and diazepam regimes on the perinatal outcome. Table VIII gives a composite picture of the outcome of the

live foetus with respect with respect of their Apgar scores in the three study groups. The difference was significant between lytic cocktail and Magsulf (P<0.05) and between Magnesium sulphate and diazepam groups (P<0.01) although the difference between diazepam and lytic cocktail groups was not significant. (P = 0.05).

TABLE - VI  
CAUSES OF MATERNAL DEATH IN DIFFERENT REGIMES.

Causes	Lytic cocktail	Magnesium sulphate	Diazepam
Intracranial Haemorrhage	1	2	1
Respiratory failure	2	-	1
Cardiac failure	1	-	-
Renal failure	1	-	1
Obstetric shock	1	1	-
Septicaemic shock	1	-	-

TABLE - VII  
PERINATAL OUTCOME IN DIFFERENT TREATMENT GROUPS.

Outcome	Lytic cocktail	Magnesium sulphate	Diazepam
Total live in births after therapy	23	29	8
Total still births	16	10	9
Foetus dead prior to therapy	10	5	7
Still birth after therapy	6	5	2
Early neonatal death (1-7 days)	7	5	4
Total perinatal deaths after therapy	13	10	6
Percentage uncorrected perinatal mortality after onset of therapy	56.5	34.5	75.0
Pre-term still births <1 kg.	2	1	3
Corrected perinatal deaths	11	9	3
Percentage of corrected perinatal mortality	47.8	31.0	37.5

TABLE - VIII  
OUTCOME OF FOETUSES ALIVE ON ADMISSION IN DIFFERENT TREATMENT GROUPS

Regime	Number	Outcome according to Apgar Score				
		7-10	4-6	0-3	Still births	
Lytic cocktail	29	6	12	5	6	P<0.05
Magnesium sulphate	34	18	8	3	5	P<0.01
Diazepam	10	5	2	1	2	

$$X^2 = 4.72$$

### Discussion

This study re-affirms the superiority of Magnesium sulphate therapy in eclampsia over the much practice lytic cocktail regime in our country. It also proves its superiority over the diazepam regime on most scores save that of control of hypertension. Taking failure of a therapy to be defined as a convulsion occurring 15 minutes after initiation of treatment (Nagar et al, 1988), our fit recurrence rate was 9.5% in Magnesium sulphate therapy compared to 1.3% of Bhat and Barfiwalla (1985), and 1.98% of Nagar et al (1988). Pritchard and Pritchard (1984) has shown a fit recurrence in 10 out of 83 cases in a

similar Magsulf regime which gives a failure rate of 12.0%. Such failure rates were much higher in lytic cocktail viz. 86% in our study, 28 in Bhat and Barfiwalla's (1985) 61.85% in Nagar et al's (1988), 30% in Devi et al's (1976), and 15% in Menon's (1961) series.

Recurrence rate in diazepam therapy is equally disappointing: 60.8% in our study, 42.8%, in Ghosh and Das's (1979), 51.6%, Ghosh and Das's (1986) and 13% in Bhat and Barfiwalla's (1985) study.

Maternal mortality in Magsulf therapy was 3 in 42 cases (7.1%) in our series though deaths were not related to the drug

but rather to the severity of the disease, as 2 cases out of 3 died of intracranial haemorrhage. In the mortality group none of the cases showed high levels of serum Magnesium sulphate. Pritchard and Pritchard (1975 and 1984) have shown 0% maternal mortality in Magsulf regime so have Nagar et al (1988). Maternal mortality in lytic-cocktail in our series was 14.0% compared to 8.16% shown by Nagar et al (1988), 2.2% by Menon (1961), 17.55% by Dutta and Biswas (1978), 5.9% by Rao and Manorama (1975) and 10.5% by Dutta et al (1981). Maternal mortality in diazepam therapy in our study was 12.5% compared to 4.7% reported (1979) by Dutta and Das. Incidence of minor to major maternal complications have been higher in lytic cocktail and diazepam therapy.

Corrected perinatal mortality in Magsulf therapy in our study was 31.0% compared to only 6.38% reported by Nagar et al (1988), Pritchard and Pritchard (1984) shows a 0% corrected perinatal mortality although their uncorrected perinatal mortality was 18.4%. Corrected perinatal mortality with lytic cocktail was higher i.e. 47.8% in our study compared to 13.8% shown by Nagar et al (1988), 47.35% by Devi et al (1976) and 16.6% by Kawathekar (1976). Corrected perinatal mortality in diazepam regime was 37.5% in our series compared to uncorrected 38.4% of Ghosh and Das (1986). Our uncorrected perinatal mortality was 75% in diazepam regime showing the adverse influence of the drug on low birth weight babies, although this figure is due to weightage of 3 very low birth weight babies in a much smaller study group.

Apgar score of foetuses alive at admission (Table VIII) show a much better

outcome with the Magsulf therapy.

In conclusion, our results with Magsulf therapy in eclampsia give the usual significant improvement on all scores over that of lytic cocktail and diazepam observed by other authors. However, our maternal mortality and perinatal mortality although comparable with one or two studies are yet on the higher side. This reflects the very late referral and moribund conditions of the patients received in our labour ward. Lack of modern amenities for fetomaternal monitoring as well as absence of optimal intensive care facilities in the labour ward could contribute to the results obtained. Nevertheless this does not rule out our final opinion in favour of Magnesium sulphate therapy in eclampsia.

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