

AN AUDIT OF ECLAMPSIA AND COMPARISON WITH DATA COLLECTED 10 YEARS AGO

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ABSTRACT

Objective: To compare data in the present setting and 10 years ago to see trends and changes.

Material and Methods: A one year study on the frequency and outcome of eclampsia was conducted in the Gynae "A" unit of Post Graduate Medical Institute, Lady Reading Hospital (PGMI, LRH) Peshawar, Pakistan. A total of 75 cases of eclampsia were admitted from 1st Jan 1998 to 31st Dec 1998. However data of only 60 patients was available for analysis.

Results: Out of the Sixty (60) cases, Thirty Six (36) were of antenatal, Nineteen (19) of intranatal & Fourteen (14) of postnatal eclampsia. The age range was from Thirteen (13) to Forty (40) years with a maximum number of patients between twenty one (21) to Thirty (30) years. 80% of the patients belonged to rural areas with 77% belonging to very low incoming group, 53% were primi gravidae with 90% of the cases presenting in the last Four (4) weeks of pregnancy. Urine albumin on an average was +2 on admission in all patients and settled to nil in 84%. All except one patient had generalized edema on admission. 70% of patients had spontaneous vaginal delivery. The average stay in hospital was 8.4 days. As per the "Death Summary" register kept in the unit 16/75 patients died of eclampsia. The perinatal mortality was almost 50%. All except one were admitted in emergency & all were un-booked for antenatal care. The results were compared with the data collected by the same author in the same hospital ten (10) years ago in 1988 as part of requirement for post graduate training in gynae & obs. The data was submitted in book form to the college of physicians and surgeons, as a prerequisite for F.C.P.S. It was not submitted to any journal for publication.

Conclusion: In comparison 10 years ago few differences were noted with a 26% increase in cases of antenatal eclampsia over the past ten

years, a 17% fall in the incidence of eclampsia in primigravidae and a 15% increase in multigravidae. The hospital stay has increased from an average of 5 days to 8.4 days. 90% of the women presented before 30 years of age in both the cases. 20% of patients presented with fits at a lower BP compared to 10 years earlier.

Key words: Eclampsia, Audit, Comparison.

INTRODUCTION

Eclampsia is one of the major clinical problems of the obstetric emergency admissions and a major cause of maternal and perinatal mortality in Pakistan.

It is a clinical condition of generalized convulsions associated with signs of pre-eclampsia (hypertension and proteinuria with or without generalized edema) after 20 weeks of gestation, during labour or within seven (7) of delivery. The convulsions are not caused by epilepsy or other convulsive disorders. In the absence of hypertension or if the convulsions occur after seven (7) days postpartum, the condition is referred to as atypical eclampsia.

The disorder is commonly seen in primigravidae of low social class, with little health awareness and no health cover. Despite their critical condition on arrival, these young patients respond very well to medical treatment alongwith termination of pregnancy and many of them recover completely. The extremely serious patients however die, making it one of the major killers of mothers in our region. The perinatal mortality is also very high in these patients.

A one year study on such risk factors and the outcome of eclampsia was carried out in the Gynae "A" Unit of PGMI, LRH, Peshawar, Pakistan and compared with data collected by the same author in the same hospital (10) years ago. The hospital caters for the general public which mostly fall in low socio-economic group. The results of the study are followed by a discussion.

MATERIAL AND METHODS

A study of Epidemiology of Fifty (50) consecutive cases of Eclampsia was done in 1988 in the Gynae unit of LRH, Peshawar, Pakistan. The data was compiled at the time and presented as a requirement for post graduate qualification. About ten (10) years later a one year study was conducted by the same author from 1st Jan to 31st Dec, 1998 to see any change in the previous data and the two were compared for the purpose. A Proforma was designed & the data compiled from the case histories. A Total of seventy Five (75) cases of Eclampsia were received in the Gynae "A" unit of LRH in the year 1998, however case notes of only 60 patients could be retrieved as 15 case notes got misplaced while being sent to the casualty department. Nearly all the cases of eclampsia were received in emergency. First their fits were controlled, followed by control of BP. Once they were stable, then labour was induced, unless they were in spontaneous labour or postnatal. Urine albumin was routinely checked by the boiling method unless severe renal problems were anticipated.

Low income group was defined as equivalent to or less than Rs. 1000/month in 1988 and Rs. 3000/- month in 1998. It was roughly taken as equivalent to the monthly income of daily wage groups. Middle income group was taken as with an average income between Rs. 1000/month to Rs. 3000/month in 1988 and Rs. 3000 to 7000/month in 1998. The upper income group was taken with an income above the middle class.

INCIDENCE OF VARIOUS TYPES

Type of Eclampsia	1988		1998	
	No. of Cases	Percentage	No. of Cases	Percentage
Antenatal	17	34%	36	60%
Intranatal	19	38%	09	15%
Postnatal	14	28%	15	25%
Total	50	100%	60	100%

TABLE - 1

Inclusion Criteria: All cases of eclampsia received in the specified one year.

Exclusion Criteria: All those maternity patients who had fits due to other causes like epilepsy, meningitis etc.

The data was compiled and presented in a tabulated form and compared with the 1988 data where available.

17 cases (34%) presented as antenatal eclampsia in 1988, whereas 36 cases (60%) presented as antenatal eclampsia in 1998, whereas, 19 cases (38%) presented in the intranatal period in 1988, where as 9 cases (15%) in 1998. 14 cases (28%) presented postnatally in 1988, whereas 15 cases (25%) in 1998. One case of postnatal eclampsia presented on day Six (6) and one on day Eleven (11) in 1998.

15 cases (30%) in 1988 and 24 cases (40%) in 1998 were in the age range of 13-20 years. In the age range of 21-30

years there were 29 cases (58%) in 1988 & 32 cases (53%) in 1998, six (6) cases (12%) in 1988 and four (4) (7%) in 1998 presented in the age range of 31-40 years. Most of the patient received were below Thirty (30) years of age with the maximum number between 21-30 yeas in both the studies.

The catchment area remained almost the same, 38 cases (76%) in 1998 and 48 cases (80%) in 1998 belonged to rural areas. 12 cases (24%) in 1988 and 12 cases (20%) in 1998 belonged to urban areas.

43 cases (86%) in 1988 and 46 cases (77%) in 1998 belonged to the low income group and 7 cases (14%) in 1988 and 14 cases (23%) in 1998 belonged to the middle income group. No patient was received from upper income group.

35 cases (70%) presented in their first pregnancies in 1988 and 32 cases (53%) presented in 1998. 11 cases (22%) in 1988 and 22 cases (37%) in 1998 presented as multigravidae and 4 cases (8%) in 1988 and

AGE GROUPS

Age in years	1988		1998	
	No. of Cases	Percentage	No. of Cases	Percentage
13 - 20	15	30%	24	40%
21 - 30	29	58%	32	53%
31 - 40	06	12%	04	07%
Total	50	100%	60	100%

TABLE - 2

6 cases (10%) in 1998 presented as grand multigravidae. There is a 17% fall in the incidence of eclampsia in primigravidae patients in this hospital over the past 10 years.

There were three (3) patients with diastolic BP. <100 mmHg on admission in 1998, all the rest had diastolic B.P of more than 100 mmHg. The presentation of high blood pressure was almost the same in both the studies.

The albuminuria present in all these patient settled to Nil in Eighty four percent (84%) of the patients before discharge in 1998 where as it was so with 98% of the patients, 10 years earlier in 1988 despite their shorter stay.

The generalized adema settled in all the patients, who recovered from the process and were discharged home in both the studies.

The fits were very well controlled on admission in both the cases.

35 cases (70%) had spontaneous vaginal delivery in 1988 and 43 cases (72%) in 1989, 13 cases (26%) in 1988 and 14 cases (23%) in 1998 had forceps/vacuum delivery. 02 cases (04%) in 1988 and 01 cases (02%) in 1998 were delivered by caesarian section for obstetric reasons. Two (02) patients died undelivered in 1998.

In 1998 Sixty percent (60%) of the babies weighed < 2.5 Kg. The perinatal mortality was almost fifty (50%). Thirty (30) babies

were either still born or died in the first week after delivery.

Eighty Percent (80%) of those born alive had an Apgar score of 7/10 or below.

Maternal Deaths

There were forty two (42) maternal deaths in the year 1998 with the maximum number of sixteen (16) death from eclampsia. Generally a post Mortem is not carried out but most of the deaths occur from C.V.A's, aspiration syndrome or severe pulmonary edema. In 1988 ten (10) patients died out of the fifty (50) patients and no patient recovered from renal failure as there was no dialysis facility available in the hospital. In 1998 four patients went in to renal failure and all of them recovered after haemodialysis which is now available in the hospital.

Hospital stay

In this study the hospital stay averaged at 8.4 days with a range of 2-17 day, whereas previously it averaged at five (05) days with a maximum stay of eleven (11) days.

All the patients in 1988 were admitted in emergency and were unbooked but 74/75 patients in 1998 were admitted in emergency and were unbooked and had no antenatal care whatsoever as observed from the labour record register and death summary registers. One patient in 1998 started having convulsions while being admitted in the ward for pre-eclampsia.

CATCHMENT AREA

Catchment Area	1988		1998	
	No. of Cases	Percentage	No. of Cases	Percentage
Rural	38	76%	48	80%
Urban	12	24%	12	20%
Total	50	100%	60	100%

TABLE - 3

INCOME GROUPS

Income Groups	1988		1998	
	No. of Cases	Percentage	No. of Cases	Percentage
Low income group	43	86%	46	77%
Middle income group	07	14%	14	23%
Upper income group	00	00%	00	00%
Total	50	100%	60	100%

TABLE - 4

DISCUSSION

Eclampsia is a clinical condition, where the pregnant patient has hypertension, proteinuria, convulsions or Coma after twenty (20) weeks of pregnancy while no other reason for the convulsions exist. Oedema may or may not be present.

Eclampsia is the foremost killer of our young pregnant women besides haemorrhage in pregnancy. Both of them alternate with each other for the first two (2) positions on the maternal mortality list in our hospital.

The incidence of maternal mortality varies according to the literacy rate, and availability of medical facilities in the community and also the affordability of medical treatment by the community.

In 1998 we had sixteen (16) maternal deaths out of seventy five (75) i.e. (21.3%) due to eclampsia despite the close collabo-

ration of the general I.C.U and nephrology units. Most of the deaths occurred in women, who developed eclampsia at home and took a long time before reaching the hospital. Most of these patients had intrauterine fetal death as well by the time they reached hospital, the cause being intrauterine growth retardation and fetal hypoxia in these babies, further compounded by maternal hypoxia during convulsions.

In the present study sixty percent (60%) of the babies weighed less than 2.5 Kg & the perinatal mortality was almost fifty (50%) and eighty (80%) of the babies had an Apgar score of 7/10 or below.

Comparing the Irish study by Taner CE & Hakverdi - AU et al² with a Finnish study by Ekholm-E and Salmi-MM et al³, it is noted that amongst the four hundred and forty four (444) cases over a period of eight (8) years in the first study, most of the patients were uneducated and had received no antenatal

PARITY

Parity	1988		1998	
	No. of Cases	Percentage	No. of Cases	Percentage
Primigravida	35	70%	32	53%
Multi Gravida	11	22%	22	37%
Grand Multigravida	04	08%	06	10%
Total	50	100%	60	100%

TABLE - 5

care. Their incidence of eclampsia was 7.71% in the obstetric population and had maternal death in forty two (42) (9.46%) of these women.

The study carried out in Finland over a four years period gave an incidence of 2.4/10,000 i.e 0.024%. None of the mothers died and the perinatal mortality was 5% and 33% of the newborns, were small for gestational age. This study shows that if medical facility is available at the door steps, the people are educated enough to avail the facility at the earliest and good neonatal facilities are available to allow earlier deliveries before pre-eclampsia proceeds to eclampsia, the maternal & neonatal morbidity & mortality can be reduced to its minimum possible.

In the study by Leitch & Cameron et al⁴ in the UK, maternal deaths from eclampsia occurred in 15.1% of cases between 1931 and 1940, 13.4% between 1941 & 1950, but fell dramatically to or 3.9% after 1950. There had been no maternal death since 1964. This has occurred in association with the introduction of National Health Services, widespread antenatal care for all and general improvement in health and welfare.

As far as the prevalence is concerned, eclampsia occurs mostly in the antenatal period as seen in our study and other studies as well as given in Table 1^{4,5,6}. We received most of the cases of postnatal eclampsia with in the first 48 hours but one proven case was received on Day six (6) and one on Day eleven (11) post partum (Table-1). Occurrence after the first five (5) days is exceedingly rare, but Michaeli (1985)⁷ has reported one such case on the sixth (6th) postnatal day. Felz M.W & Barnes et al⁸ reported one proven case of eclampsia on the sixteenth (16th) postnatal day. There are authors, including Amon and Sibai (1985)⁹, Bernard (1960)¹⁰, Sanches (1967)¹¹ and Chapman and Karimi (1973)¹² who have reported cases of post partum eclampsia documented by renal biopsy specimens and post-mortem examination, occurring three (3) to twenty three (23) days after delivery.

Some studies mentioned eclampsia to be common at or below 20 years of age^{13,14}. Generally there is a perception that eclampsia more commonly affects women at the extremes of reproductive age, that is teenagers or older than thirty five (35) years (Chesley, 1985)¹⁵, but this was not found in our study where most women were between 21-30 years of age (Table-2). Maksheed M & Musini VM¹⁶ also mentioned the age below thirty (30) years to be a risk factor. This traditional view is also not supported by Guzick and associates (1986), who reported that woman of younger age, did not have a higher incidence of pregnancy induced hypertension when parity was considered. It is also more common in patients having female relatives with similar condition, in patients having per-existing hypertension, chronic renal disease or with latent or clinical diabetes. Besides it is more common in the lower socio-economic group, those with hydramnios and multiple pregnancies. With hydatidiform mole it may occur even before twenty (20) weeks of gestation. It is less common in smokers. It is also believed that some males are more prone to cause it in their partners.

Primigravidity is well known risk factor^{1,5,14,16,17} and so was the case in our population in the North West Frontier Province of Pakistan (Table-5).

It is commonly a disease of the poor (Table-4) with little education and poor access to medical facilities^{2,4,14,17}. All patients in 1988 & 74/75 in 1998 had no antenatal care.

In our setup, we aim for vaginal deliveries except when there is fetal distress or any other obstetric indication for caesarean section. Caesarean section and general anesthesia carries a greater maternal morbidity and mortality in such severely ill patients. We had a caesarean section rate 2.4% compared to 50.12% reported in a study by Taner et al in Ireland in 1996².

While comparing the data of 1988 to that of 1998, two significant changes were noted.

As shown in Table (I) cases of antenatal and intranatal eclampsia were roughly equal in 1988 but there is a significant, twenty six (26%) increase in the cases of eclampsia presenting in the antenatal period in 1998 and a marked falling cases of eclampsia presenting in the intranatal period.

Table (5) shows a 17% fall in the incidence of eclampsia in primigravidae over the past ten years with a 15% rise in the incidence of eclampsia in multigravidae. The above two changes need to be further looked into as these may be due to a rise in the incidence of hypertension in the general population with super added pre-eclampsia and eclampsia occurring at an earlier age of gestation and presenting more in multigravidae between the ages of 21-30 years.

Looking at the above discussion it is very evident that unless the general living standards, and literacy rate are improved in addition to improvement in the health care system, the incidence and maternal deaths from eclampsia cannot be reduced in the population.

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