

ECLAMPSIA A MAJOR CAUSE OF MATERNAL MORTALITY

Saima Gilani and Lubna Hussan

*Department of Gynaecology and Obstetrics,
Hayatabad Medical Complex, Peshawar*

SUMMARY

Maternal mortality from eclampsia was evaluated in 30 patients admitted with eclampsia at Hayatabad Medical Complex, Peshawar during the period of one year from January, to December, 2000. Majority of patients were primigravidae aged less than 20 years having gestational age of more than 28 weeks. Common maternal complication were pulmonary oedema, loss of blood pressure control and tongue bite. Total number of deliveries during the study period were 2882, prevalence of eclampsia in our study was 10.4 per 1000 deliveries. A total of 17 maternal deaths occurred during the study period, 5 out of these were due to eclampsia. Maternal mortality from eclampsia was 16.66% and accounted for 29.4% of the total maternal deaths during this period.

INTRODUCTION

Pre-eclampsia / eclampsia is an unpredictable multiorgan disorder unique to human pregnancy. It is associated with significant maternal and fetal morbidity and mortality. Worldwide treatment of this disorder remains a challenge to even the most experienced obstetrician mainly because the exact etiology is not known. Changes such as increased sensitivity to vasopressors, reduced plasma volume, altered proximal tubular function and activation of coagulation system antedates overt hypertension and suggests that hypertension may not be central to the pathogenesis of

pre-eclampsia. Consequently management is directed towards detection of the disorder at an early stage and to effect or at least ameliorate its progression in an attempt to achieve fetal maturity while preventing maternal complication.¹

Pre-eclampsia a disorder with genetic and immunological components occur in approximately 3% of patients a figure mirrored world wide. It is possible that unmanaged pre-eclampsia could proceed in a large proportion of cases. This is supported by a review carried out in 1996 of the literature in Bangladesh. In this population with major social deprivation and lack of access to trained birth

attendants, the incidence of eclampsia itself was found in some areas to be as high as 30 per 1000.²

In Pakistan eclampsia is a serious complication of pregnancy induced hypertension and it is the common cause of maternal and perinatal deaths like other developing countries.

MATERIAL AND METHODS

This study was conducted on the patients admitted with a diagnosis of eclampsia. Most of the patients were admitted in emergency through casualty. A detailed history was taken followed by systemic and obstetric examination. Immediate management consisted of securing airway and prevention of further convulsions. In antenatal cases, labour was either induced or augmented depending on bishop score. Necessary routine investigation i.e. renal function test, haematological parameters (Haemoglobin, clotting profile and platelet count) liver function test, fundoscopy and urine for protein were carried out.

RESULTS

A total of 2882 deliveries occurred in Hayatabad Medical Complex from January 2000 – December 2000. A total of 17 maternal deaths occurred during the study period, 5 out of these were due to eclampsia making eclampsia the major single cause of maternal mortality. During this period a total of 30 patients were

AGE DISTRIBUTION

Age	No.	%
<20	17	56
20-30	6	20
>30	7	23.3

TABLE - 1

PARITY DISTRIBUTION

Parity	No.	%
Nullipara	18	60
Multipara	6	20
Grand multipara	6	20

TABLE - 2

admitted with a diagnosis of eclampsia. Majority of these patients were aged less than 20 years. One of these patients was booked and the rest were un-booked who presented for the first time in emergency.

The period of gestation at admission in the hospital was more than 28 weeks in the majority of the patients (Table 3)

On the basis of past history 7(23.33%) of the patients had history of pre-existing hypertension 1(3.33) had chronic renal disease and 4(13.33) had history of pre-eclampsia in previous pregnancy (Table 4).

36.66% of the cases with eclampsia had antepartum seizures.

After initial resuscitation all patients were evaluated for presence of labour and appropriate mode of delivery. 11 patients had spontaneous vaginal delivery. 5(16.66%) had assisted vaginal delivery and elective lower segment caesarean section was done in 1(3.33%) case. 12(40%) patients were induced, 7(23.33%) had vaginal delivery after induction, 1(3.33%) required instrumental delivery and 4(13.33%) had emergency lower segment caesarean section (Table 6)

Period of Gestation	No.	%
<28 weeks	1	3.33
>28	29	96.66

TABLE - 3

Past History	No.	%
Negative	18	60
Pre-existing hypertension	7	23.33
Chronic renal disease	1	3.33
Pre-eclampsia in previous pregnancy	4	13.33

TABLE - 4

Almost all patients suffered from some form of morbidity, many patients had more than one complication. The common problems encountered were tongue bite, pulmonary oedema, loss of blood pressure control. We encountered 5(16.66%) maternal deaths in 30 cases of eclampsia, which was the single most common cause.

Causes of death included hepatorenal failure 2(40%) cerebrovascular accident 2(40%) and HELLP syndrome. Maternal mortality ratio in our hospital during the study period was 17/2882 births. Of the total maternal mortality 29.4% was contributed by eclampsia.

DISCUSSION

Incidence of eclampsia varies from 0.2 – 0.5% of all deliveries in the developing countries. Maternal mortality associated with this condition remains high in the developed and the developing world. When women die of pre-eclampsia/eclampsia it is most commonly due to cerebral haemorrhage and pulmonary complication. Maternal mortality remains 2-4% among patients with HELLP syndrome and 10% in patients

Fits	No.	%
Antepartum	11	36.66
Intrapartum	12	40
Postpartum	7	23.33

TABLE - 5

Mode of Delivery	No.	%
1. Spontaneous vaginal delivery	11	36.66
2. Instrumental	5	16.66
Vacuum	1	3.33
Forceps	4	13.33
3. Lower segment caesarean section	1	3.33
4. Induced	12	40
Vaginal delivery	7	23.33
Instrumental	1	3.33
Lower segment caesarean section	4	13.33
5. Expired before delivery	1	3.33

TABLE - 6

with pulmonary oedema.⁴ Death is still mainly due to cerebral haemorrhage, probably the result of failure to control severe hypertension, but can also result from DIC, renal failure or liver necrosis. The complications can all be anticipated by appropriate investigations' establishment of expert team in each region which can advise about management or to take over cases if required.

Maternal Complication	No.	%
Placental abruption	0	
Pulmonary oedema	6	20%
Hellp syndrome	1	3.33%
Severe renal impairment	2	6.66%
Elevated liver enzyme	2	6.66%
Loss of blood pressure control	9	30%
Temporary blindness	2	6.66%
Tongue bite	5	16.66%
Mortality	5	16.66%

TABLE - 7

Cause of death in Eclampsia	No.	%
Cerebro vascular accidents	2	40
Hepato renal failure	2	40
HELLP syndrome	1	20

TABLE - 8

Prevalence of eclampsia in our study was 10.4 per 1000 deliveries, during the study period maternal mortality from eclampsia was 16.66% and accounted for 29.4% of the total maternal deaths during this period.

Bashir et al⁵ reported a prevalence of eclampsia of 1.2% and maternal mortality from eclampsia to be 8.35 - 10.3% during 1991-1993 in Faisalabad city. A study in Multan⁶ reported a prevalence of eclampsia of 18/1000 deliveries and 11% maternal mortality. Farook⁷ recorded a 20-24% maternal mortality due to eclampsia while Hashmi⁸ reported eclamptic mortality to be 9% over a five year period. While 1.5 deaths /100,000 live births due to pre-eclampsia or eclampsia were reported from U.S.A.⁹

In the BES (British Eclampsia Survey) mortality from eclampsia was found to be approximately 2%.¹⁰ However world wide the picture remains poor. Mortality rates in the collaborative eclampsia trails are low (2.6 - 5.2%). It is not true of most studies from developing countries. Hospital data from a large referral centre in Bangladesh has revealed a much higher mortality of over 20%⁽¹¹⁾. Similar to that in Europe early in the 20th century. Indeed given that pre-eclampsia and eclampsia still account for 20% of maternal deaths world wide, the current annual world wide mortality can be estimated to be about 150,000 women.¹² In the university hospital Banares India every third eclamptic parturient died. Substandard care also adds to the maternal mortality. If only this aspect is

taken care off we may be able to reduce mortality from eclampsia. Substandard care was identified in upto 77.8% cases in Singapore. In the last two confidential enquires into maternal mortality substandard care was evident in 80% of the cases. In the latest report 55% of the hypertensive deaths were through to have been avoidable.¹³

CONCLUSION

The status of maternal health in Pakistan is poor, each year an estimated 25,000 to 30,000 women die due to pregnancy related causes and an innumerable suffer from complications some of which may be severe. Many factors are responsible for this state of affair apart from non availability of health care facilities social, cultural and economic reasons contribute to this high maternal mortality and morbidity. The status of emergency obstetrical care in Pakistan, is poor. A recent survey was conducted to access the state of emergency obstetrical care in four districts of Sindh province. The survey looked at the availability of essential life saving equipment, knowledge and skill of health care providers and community health seeking references. It was found that 30% of the institutions did not have any facility for even simple procedures like test haemoglobin, blood sugar or urine analysis for albumin and glucose. 35% of facilities reported having transport available round the clock for transferring women in case of an emergency. About 30-50% of health care providers had not learnt some of the relevant skills mentioned and 50% had not performed the learnt skills in the past six months. The percentage of correct responses were better for medical officers, while lady health visitors scored better than nurses did. This study shows that prompt action is re-

quired to improve the chance of survival of women who need essential obstetrical services in case of emergency.¹⁴

A national programme of mother and child health education must be implemented. There should be a net work of mother and child health centres in the country with close collaboration of TBA's. LHV's general practitioners and department of obstetrics in teaching hospital / DHQ / THQ when ever feasible . In the management of eclampsia overall vigilance need to be maintained at a high level. This involves prompt action by the first referral level to provide initial treatment and to transfer the patient to an intensive care unit or an appropriate high level dependency care, adequate consultant involvement. The obstetrical consultant with special interest team in each hospital team should liaise where appropriate with regional experts in complicated cases. In individual units implementation of standard protocol agreed upon by obstetrician, anaesthetist and midwives. Presence of eclampsia kits, intensive care facilities at the same site and wider adoption of magnesium sulphate for managing eclampsia will go a long way in decreasing the maternal mortality rate. Since the introduction of low dose magnesium sulphate to treat eclamptic patients at Dhaka Medical Collage, mortality rates had fallen from 16% to 8%. In the future standardizing management with national guide lines and auditable standards should be aimed for. Out comes other than mortality should be standardized and collated nationally such as intensive care admission and near miss cases and cohort studies should be established to examine the role played by 'substandard care' using a matched control group. There is enormous scope for preventing deaths from eclampsia world wide – a suitable challenge of our generation.¹²

REFERENCES

1. Maharaj B, Moodley J. Management of hypertension in pregnancy *Cont Med Educ* 1991; 12: 1518.
2. Eclampsia working group. Eclampsia in Bangladesh a review and a guideline. *Bangladesh J obstet Gynaecol* 1996; 12: 1.
3. Katz VL, Farmer R, Kuller JA. Pre-Eclampsia into Eclampsia : Toward a new paradigm *Am J Obstet Gynecol* 2000; 182 (6): 1389.
4. Sibai BM. Pre-eclampsia, eclampsia maternal and perinatal out come. *Contemporary obstetric and gynaecology* 32; 109.
5. Bashir A., Cheema MA., Mustansar M. and Fouzia Idrees. Management of eclampsia. *Specialist Pakistan J Med. Sci.* 1994; 11(1): 9.
6. Din NU, Khan AU, and Illahi N. Perinatal and maternal outcome of eclamptic patients admitted in Nishtar Hospital Multan *JCPSP Vol* 10(7): 261-264.
7. Farook S, Maternal mortality at Liaquat Medical College Hospital Hyderabad 1986-90. In: Zaidi S(ed) *Maternal and perinatal health in Pakistan. The proceedings of a work shop held at 7-8th January 1993 Peshawar 7-8 Twel publishers Karachi* 1993; 17.
8. Hashmi HA. Perinatal mortality in civil hospital Karachi and its comparison with perinatal mortality in two urban slums of Karachi. In Zaidi (Ed) *Maternal and perinatal health in Pakistan. The proceedings of a workshop.*
9. Mackay AP, Breg CJ, Atrash HK. Pregnancy related Mortality from pre-eclampsia and eclampsia. *Obstet Gynecol* 2001; 97 (4): 533
10. Douglas KN, Redman (WG) Eclampsia in the United Kingdom *BMJ* 1994; 309: 1395.
11. Hussain F. Johanson RB. Tones PW. One year survey of maternal mortality associ-

- ated with eclampsia in Dhaka Medical College Hospital. *J obstet Gynaecol* 2000; 20: 239.
12. Richard Johanson. Towards safer child birth an historical view of eclampsia *The Obstetrician & Gynaecologist*, April 2001; 1 3(2): 97.
 13. Drife J. Lewis G. Why mothers die Report on confidential enquiries into Maternal deaths in the United Kingdom. 1994-1996 London. The Stationery office; 1998.
 14. Qureshi RN. Emergency Obstetrical care. A manual for Physicians 2002. *Reproductive Health*. Page.53-59
 15. Begum R, Begum A, Bullough CH. Reducing maternal mortality from eclampsia, using magnesium sulphate. *Eur J Obstet Gynecol Reprod Biol* 2000; 92(2):223.