The Professional Medical Journal
www.theprofesional.com
DOI: 10.17957/TPMJ/15.3004

ORIGINAL PROF-3004

ECLAMPTIC PATIENTS;
MATERNAL AND PERINATAL OUTCOMES

Dr. Sadia Zahoor[1], Dr. Tahira Malik[2], Dr. Sonia Zulfiqar[3]

1. (MBBS, FCPS Gynecology) Assistant Professor, Obstetrics & Gynecology Department, Sheikh Zayed Medical College / Hospital, Rahim Yar Khan.
2. (MBBS, FCPS Gynaecology) Assistant Professor, Obstetrics & Gynecology Department, Sheikh Zayed Medical College / Hospital, Rahim Yar Khan.
3. (MBBS, PGR Gynecology) Sheikh Zayed Medical College / Hospital, Rahim Yar Khan.

Correspondence Address:
Dr. Sadia Zahoor
(MBBS, FCPS Gynecology)
Assistant Professor,
Obstetrics &Gynecology Department,
Sheikh Zayed Medical College / Hospital, Rahim Yar Khan.
sadia.szmc@gmail.com

Article received on:
03/07/2015
Accepted for publication:
17/08/2015
Received after proof reading:
13/11/2015

ABSTRACT… Background: Hypertensive disorders are the second most common cause of maternal death worldwide. Eclampsia is the extension of pregnancy induced hypertension to the point of conclusions, coma or both. **Objectives:** To find out the incidence of eclampsia among pregnant women and to identify the maternal and perinatal outcomes of eclamptic patients treated in a tertiary care referral hospital. **Study Design:** Discretional cross sectional study. **Setting:** Department of Obstetrics & Gynecology, Sheikh Zayed Hospital, Rahim Yar Khan. **Period:** January 2014 to December 2014. **Methods:** A total number of 96 patients out of 10513 who were diagnosed as being eclamptic during the study period were included in this study. While normal pregnant women and Patient's with uncertain diagnosis was excluded. All patient variables were entered and analyzed using SPSS v20. Frequency and percentages were used to express qualitative variables. **Results:** There were total ninety six patients (0.913%) out of 10,513 who presented with eclampsia. Most of eclamptic patients were of having age >21 years. Among patients who developed eclampsia 52 (54.16%) were in Ante partum period and 40 (41.66%) were in postpartum period. Out of 96, five patients died before delivery and thirteen after delivery, seventy eight patients developed one or more complications during delivery. Out of total 91 deliveries, 54 (59.30%) were delivered by cesarean section (C/S). Main reason for C/S was unfavorable cervix. Out of total ninety one deliveries two were twins and eighty nine singletons. Fifty eight (62.36%) babies were born at a gestational age <37 weeks. Birth asphyxia occurred in sixty one (65.60%) newborns. There were twenty two (23.65%) perinatal deaths, fourteen (63.64%) were stillbirths and eight (36.36%) were early neonatal deaths. **Conclusion:** Eclampsia is found to be associated with very high rates of maternal mortality and morbidity as well as perinatal mortality. Early diagnosis of eclampsia and its timely management can reduce the risk of this mortality. This can be made possible by provision of basic facilities and improvements in the quality of basic care provided by our antenatal clinics.

Keywords: Pregnancy, Eclampsia.

Article Citation: Zahoor S, Malik T, Zulfiqar S. Eclamptic patients; maternal and perinatal outcomes. Professional Med J 2015;22(11):1464-1470. **DOI:** 10.17957/TPMJ/15.3004

INTRODUCTION

Pregnancy is not a disease and pregnancy related complications are always presentable.[1] The major causes of maternal mortality and morbidity in our country are Hemorrhage. Hypertensive disorders, sepsis, obstructed labor and abortion.[2]

Hypertensive disorders are the second most common cause of maternal death worldwide.[3] these disorders complicate approximately 10% of all pregnancies and eclampsia occurs in about 1.3% of these cases.[4]

Eclampsia is the extension of pregnancy induced hypertension to the point of conclusions, coma or both.[5] the word "Eclampsia" dates from the 17th century. It does not infect means "fits" for the original Greek word means "to shine forth" "to flash out" because of visual phenomenon accompanying the condition.[4,5]

The maternal mortality rate related to eclampsia varies worldwide from 1.8% in U.K up to 43.1% in Nigeria.[6] the cause of eclamptic convulsions is not known. Both cerebral vasospasm and cerebral edema are incriminated but are unproved as etiologic agents.[7] 44% of seizures occur postpartum, 38% ante partum and 18% intrapartum.[8] The

recurrence rate of seizures is 5-30% even with treatment.[7,8]

Morbidity from eclampsia is associated with acute renal failure, pulmonary edema, cardio-pulmonary arrest and aspiration.[9] Perinatal mortality form eclampsia is reported to 5-11.8% in developed countries as compared to developing nation, where eclampsia related perinatal mortality can be as high as 40%.[7,10] The causes of perinatal death are chronic placental insufficiency, preterm delivery and placental abruption.[10]

Eclampsia is a much unpredicted disease. In most cases all the onset of pre-eclampsia is insidious and pathological changes occur before clinically detectable hypertension and proternuria.[11] In addition symptoms occur only at the end stage of disease just before eclamptic episode.[11,12] It has been established that good antenatal care can prevent the occurrence of eclampsia, though not in all cases. Therefore, the challenge is to balance the timing of delivery of pre-eclamptic patient before the onset of eclampsia with fetal viability.[11]

Eclamptic convulsions are life threatening emergencies and require the proper treatment to decrease maternal morbidity and mortality.[12] Fortunately eclampsia is a presentable disease.[4,5] The occurrence of eclampsia can be prevented by good antenatal care, early recognition and treatment of mild and severe pregnancy induced hypertension.[10,11]

The purpose of this study is to analyze the incidence of eclampsia and to identify the maternal and perinatal outcome of eclamptic patients treated in a tertiary care referral hospital i.e. Sheikh Zayed Hospital, Rahim Yar Khan.

OBJECTIVES

To find out the incidence of eclampsia among pregnant women and to identify the maternal and perinatal outcomes of eclamptic patients treated in a tertiary care referral hospital.

METHODS

This description cross sectional study was carried out between January 2014 to December 2014 in the department of Obstetrics & Gynecology, Sheikh Zayed Hospital, Rahim Yar Khan. Sheikh Zayed Hospital is a teaching and tertiary care hospital. A total number of 96 patients out of 10513 who were diagnosed as being eclamptic during the study period were included in this study. While all other normal pregnant women and Patients who presented with uncertain diagnosis were excluded from the study.

Eclamptic patients were admitted to labor ward or postnatal ward unless they need intensive care, in which case they were admitted to the intensive care unit. Neonates of eclamptic women were admitted to the Neonatal unit or Neonatal Intensive care unit for observation or treatment depending on the needs of the particular neonate.

Patients who developed convulsions at home or at hospital during ante-, intra or post-partum period were considered eclamptic. These patients were dealt by a team of highly qualified obstetricians, nurses and paramedical staff in the labor room.

All relevant information regarding demographic data, clinical finding, laboratory results and each patient's outcome and her newborn (s) was recorded on a Performa. Data about antenatal care was extracted from the patient's history file and antenatal card.

All patient variables were entered and analyzed using SPSS v20. Frequency and percentages were used to express qualitative variables.

RESULTS

There were total 96 patients who presented with eclampsia out of 10,513 deliveries during the 01 year study period (2014). So the incidence of eclampsia was 0.913% according to this study. Most of eclamptic patient were of age <21 years (47.91%) and majority (63.54%) were primiparous (Table-I). In all eclamptic patients, 75% were unbooked and 25% were booked and out of these only 4.2% patients had attended three or more visits (Table-I). Most of the patients who attend

antenatal clinic did not have their blood pressure and urine protein check.

According to the antenatal cards received only 41.6% had a documented antenatal BP and only 41.6% had had a documented antenatal urine dipstick result. Among the patients who had antenatal blood pressure screening 95.2% were hypertensive during antenatal visits. Among those who developed eclampsia 54.16% patients were in antepartum period, 4.16% develop during labor and 41.66% patients were in postpartum period. Out of 40 patients in postpartum period, 31 patients referred from periphery in serious condition.

MATERNAL OUTCOME

In total 96 patients 18 patients died, 05 before delivery and 13 after delivery. Out of total 91 deliveries, 54 (59.3%) were delivered by Caesarean section and others by spontaneous delivery (Table). Main reason for Caesarean section was unfavorable cervix. Seventy eight (78) patients developed one or more complications. HELLP syndrome occurred in 20 patients (25.64%), Tongue bite occurred in 4 patients (5.12%). 10 (12.82%) patients presented with abruption placenta, and 04 (5.12%) patients also develop acute renal failure (Table-II). Five patients before delivery died mainly due to intra cranial hemorrhage and pulmonary edema. Eight (8) out of 13 postpartum deaths were delivered in periphery and presented in Labor room in very serious condition. Causes of death include multi systemic organ failure, pulmonary edema, acute renal failure, stroke, disseminated intra vascular co-agulopathy presented by abruption placenta (Table-II).

Perinatal and Neonatal outcomes

There were 02 sets of twins and 89 singletons, accounting for a total 93 delivered babies. Sixty babies (64.52%) had a low birth weight. Fifty eight (62.36%) were born at gestational age of <37 weeks (pre-term). Birth asphyxia (defined as an APGAR score <7 at 5 minutes) occurred in 61 (65.60%) newborns out of 93 babies There were twenty two (22) perinatal deaths.

Variables	Number (%)
Socio-demographic characteristics	
Age (Year)	
<21	46 (47.91)
21-30	34 (35.41)
>30	16 (16.66)
Parity	
Primipara	61 (63.54)
Multipara	35 (36.4)
Education	
None	46 (47.9)
Primary	46 (47.9)
Secondary	3 (3.12)
University / college	1 (1.04)
Occupation	
Housewife	42 (43.75)
Employed	54 (56.25)
Residency	
Urban	7 (7.29)
Semi urban	16 (16.6)
Rural	73 (76.04)
Background Characteristics	
Booking status	
Not booked	72 (75)
Booked	24 (25)
No of visits (s)	
1 – 2	23 (95.8)
≥ 3	1 (4.2)
Antenatal BP	
Checked	10 (41.6)
Not checked	14 (58.3)
Antenatal BP	
Hypertension	20 (95.2)
Normotensive	4 (4.8)
Antenatal proteinuria	
Checked	10 (41.6)
Not checked	14 (58.33)
Gestational age on admission	
< 37 weeks	24 (46.1)
≥ 37 weeks	28 (53.8)
Occurrence of fits (seizures)	
Antepartum	52 (54.16)
Intrapartum	4 (4.16)
Postpartum	40 (41.66)
Patient admitted from	
Home	58 (60.41)
Referral form other hospital	28 (42.4)
Antenatal ward	10 (10.4)

Table-I. Socio-demographic characteristics of eclamptic patients admitted to obstetrics ward.

Variable	Number (%)
Mode of delivery	
Caesarean Section	54 (59.34)
Spontaneous delivery	37 (40.65)
Reason for Caesarean Section	
Unfavorable cervix	33 (61.1)
Foetal distress	14 (26.0)
Others	07 (12.9)
Main Complications	
DIC*	17 (21.79)
Acute renal failure	12 (15.38)
Pulmonary edema	11 (14.10)
HELLP syndrome	20 (25.64)
Maternal stroke	04 (05.12)
Abruption placenta	10 (12.82)
Tongue bite	04 (05.12)
Maternal outcome	
Alive	78 (81.25)
Dead	18 (18.75)
Causes of Death	
Intra cranial haemorrhage	4 (22.22)
HELLP syndrome	2 (11.11)
Acute renal failure	2 (11.11)
Pulmonary edema	3 (16.66)
Placental abruption	1 (5.55)
Maternal stroke	1 (5.55)
DIC	3 (16.66)
Aspiration pneumonia	2 (11.11)

Table-II. Maternal Outcomes During and After Delivery.
**DIC= Disseminated intravascular coagulation,*

Out of these 22 deaths, fourteen were still births and eight were early neonatal deaths (Table-III).

DISCUSSION

Half a million women die each year due to pregnancy related complications and 95% of them come from developing world.[13] The lifetime risk in a women dying of pregnancy related causes in developing countries is 1:40 as compared to 1:3600 in developed world.[14]

Complications of pregnancy and delivery are the leading causes of death and disability among women of child bearing age. In Pakistan, over 5 million women become pregnant every year, out of these 0.7 million (15% of all pregnant women) are likely to experience some obstetrical and medical complication.[15]

Variable	Number (%)
Gestational age at delivery	
< 37 weeks	58 (62.36)
≥ 37 weeks	35 (37.63)
Number of newborn (s)	
Singleton	89 (95.70)
Twins	04 (4.30)
Birth weight	
Low birth weight	60 (64.52)
Normal birth weight	33 (35.48)
APGAR Score at 5 min	
Less than 7	61 (65.60)
≥ 7	32 (34.40)
Perinatal outcome	
Stillbirths	14 (15.00)
Early neonatal death	08 (08.65)
Alive	71 (76.35)
Causes of early neonatal deaths	
Severe birth asphyxia	03 (37.5)
Prematurity	05 (62.5)

Table-III. Perinatal and Neonatal outcomes.

There is no organized mechanism of data collection in Pakistan. According to one of the survey in Pakistan in 1989-90, the most common causes of maternal mortality were hemorrhage (21%), hypertensive diseases (18.6%), sepsis (13.3%), abortion (11%) and others (36%).[16]

Eclampsia is still a major cause of maternal mortality and morbidity worldwide. The incidence of eclampsia and hypertensive disorders are high in our country.[16] In developing country prevalence of eclampsia has been reported to be 1.2% – 2.3%.[17] According of Douglas and Redman, the prevalence of eclampsia in developed countries is 0.4%.[17,18]

During my study of one year in Sheikh Zayed Hospital, incidence of eclampsia is 91.3/10,000 deliveries. In Britain the incidence of 72/100,000 deliveries while in the Cardiff center the incidence was 53/100,000 deliveries.[18] which was very high as compared to these researches.

In Northern Nigeria, Uttar Pardesh, India and in Tanzania incidences of 9.42%, 2.2% and 2% - 5% respectively.[19] In developed countries; the incidence of eclampsia is very low with a range of 0.29% - 0.75%. This low incidence is mainly due

to the provision of standard antenatal care for most pregnant women in these countries.[20]

Morbidity and mortality among eclamptic patients admitted to our hospital was similar to that of eclampsia-associated morbidity and mortality seen in other developing countries. Who had a maternal case fatality rate of 18.75%. Our case fatality rate was very high compared to studies conducted in United States of America, where fatality rate is less than 0.5%.[21]

The high maternal mortality from complications of eclampsia is attributed to the limited capability to manage such complications in a low resource setting.[22] However, many of the maternal complications seen in the eclamptic patients appeared to arise from delays in the timely management of pre-eclamptic patients.[23] Three delays models are defined to understand the reasons of high maternal mortality in developing countries. These delays include the delays in seeking medical care, delay in arriving at the facility, and delay in receiving standard care at the healthcare facility.[25] Third delay is a major contributor to eclampsia-related maternal mortality in our area. A simple and effective method of screening for pre-eclampsia is to have blood pressure monitoring and protein-uria checked by dipstick in all pregnant women at every antenatal visit. However, information gleaned from patients antenatal cards show that among all women who developed eclampsia, only 41.6% had a documented BP and only 41.6% had a documented urine dipstick result. Failure of screening for such basic but important parameters is related to the deficiency of such basic equipments such as sphygmo-manometers and urine dipsticks in our local clinics. A study by Urassa et al demonstrated this to be the case in some parts of rural Tanzania.[25] According to results of this study, inadequate care at the antenatal clinics was associated with high rates of maternal death at the referral hospital level. A major predictor of maternal mortality was having multiple eclampsia-related complications. Many of the patients referred to our hospital form other centers were already critically ill.

40 patients (41.66%) presented with postpartum eclampsia. In which 31 patients were delivered in periphery and presented in Labor Room within 10 days post-delivery. High booked pressure complicates approximately 10% of all pregnancies. Usually women at both extremes of the reproductive age are considered to be at increased risk.[20,21] However, Guzich et al reported that younger women did not have a higher incidence of pregnancy induced hypertension when parity was considered.[22] Our study seems to refuse these findings because 46 (47.91%) women were of age <21 years with 63.54% were primigravida. Hanseen found a 2-3 fold increase in of pre-eclampsia / eclampsia in nulliparous our 30 years old.[23]

Familial incidence was difficult to assess owing largely to the lack of knowledge on the part of the patient relating to her family history due to illiteracy.[26]

According to Cooper and Wilton, the prevalence of toxemia in sisters, daughters and sisters in law of eclamptic women proved to fit closely with the notion of maternal homozygosis for a recessive gene.[27] Incidence was found to be equal in all races.[27] In this study, 54.16% of eclamptic women presented in antepartum period, 4.6% during delivery and 41.66% after delivery.

Almost all patients suffered some form of morbidity. Many patients have more than one complication.[26] It has been found that occurrence of more than two organ failure that persisted for > 48 hours was invariably associated with a fatal outcome.[27] In this study,25.64% patients suffered from HELLP syndrome, 15.38% with acute renal failure, 21.79% with D.I.C in which most patients also presented with abruption placenta. 5.12% patients presented with tongue bite. According toOur study, severe birth asphyxia and pre-maturity were the major causes of early neonatal deaths. Studies conducted by Tukur and Sibai also showed similar findings.[4]

CONCLUSIONS

Eclampsia is found to be associated with very high rates of maternal mortality and morbidity as well as perinatal mortality. Early diagnosis of eclampsia and its timely management can reduce the risk of this mortality. This can be made possible by provision of basic facilities and improvements in the quality of basic care provided by our antenatal clinics.

REFERENCES

1. Tinker AG, Finn K, Epp J. **Improving Women's Health.** The World Bank, Washington DC. 1998.
2. Women's health in Pakistan. **Fact sheets prepared for Pakistan National forum on women's health.** WHO 1997; 14:3-5.
3. Khan KS, Wojdyla D, Say L, Gülmezoglu AM, Van Look PF. **WHO analysis of causes of maternal death: a systematic review.** The lancet. 2006;367(9516):1066-74.
4. Duley L. **Pre-eclampsia and the hypertensive disorders of pregnancy.** British Medical Bulletin. 2003;67(1):161-76.
5. Chesely LC, Annitto JE. **Consequence of eclamptic women. Six pro report.** Am J QbstetGynaecol 1976; 124: 446-59.
6. Tukur J, Umar B, Rabi'u A. **Pattern of eclampsia in a tertiary health facility situated in a semi-rural town in Northern Nigeria.** Annals of African Medicine. 2007;6(4):164-7.
7. Anderson DG. Eclampsia. **Manual of clinical problems in Obstetrics & Gynecology.** Edited by Riubin EM, Morrison CJ, Bates WG. 2nd ed. 35-37.
8. Group TETC. **Which anticonvulsant for women with eclampsia? Evidence from the Collaborative Eclampsia Trial. The Lancet.** 1995;345(8963):1455-63.
9. Sibai BM. Eclampsia: VI. **Maternal-perinatal outcome in 254 consecutive cases. American journal of obstetrics and gynecology.** 1990;163(3):1049-54.
10. Barton JR, Sibai BM. **Prediction and prevention of recurrent preeclampsia.** Obstetrics & Gynecology. 2008;112(2, Part 1):359-72.
11. Sibai BM. **Diagnosis, prevention, and management of eclampsia. Obstetrics & Gynecology.** 2005;105(2):402-10.
12. Repke JT, Robinson JN. **The prevention and management of pre-eclampsia and eclampsia.** International Journal of Gynecology & Obstetrics. 1998;62(1):1-9.
13. Arife T. **Maternal mortality: National and Internation perspectives. In: Shaughn PM, O Brain (Editors).** The yearbook of Obstetrics and Gynecology Vol 8. 2000: 91.
14. Maternal mortality. **World Health Statistics.** WHO Bulletin 1996; 29(2).
15. Longo SA, Dola CP, Pridjian G. **Preeclampsia and eclampsia revisited. Southern medical journal.** 2003;96(9):891-9.
16. Family and reproductive health courage of maternity care. **Society of Obstetricians and Gynecologist.** SOGP Survey 1989 – 90. Pakistan WHO 1997.
17. Saudan P, Brown MA, Buddle ML, Jones M. **Does gestational hypertension become pre□eclampsia? BJOG: An International Journal of Obstetrics & Gynaecology.** 1998;105(11):1177-84.
18. Wightman H, Hibbard BM, Rosen M. **Perinatal mortality and morbidity associated with eclampsia.** BMJ. 1978;2(6132):235-7.
19. Swain S, Ojha K, Prakash A, Bhatia B. **Maternal and perinatal mortality due to eclampsia.** Indian pediatrics. 1993;30(6):771-3.
20. Choudhary P. **Eclampsia: a hospital based retrospective study.** Kathmandu Union Med J (KUMJ). 2003; 1(4): 237-41.
21. Mattar F, Sibai BM. EclampsiaVIII. **Risk factors for maternal morbidity.** American journal of obstetrics and gynecology. 2000;182(2):307-12.
22. Onuh S, Aisien A. **Maternal and fetal outcome in eclamptic patients in Benin City, Nigeria.** Journal of Obstetrics & Gynecology. 2004;24(7):765-8.
23. MacKay AP, Berg CJ, Atrash HK. **Pregnancy-related mortality from preeclampsia and eclampsia.** Obstetrics & Gynecology. 2001;97(4):533-8.
24. Moodley J. **Maternal Deaths Associated with Hypertensive Disorders of Pregnancy: a opulation-Based Study.** Hypertension in pregnancy. 2004;23(3):247-56.
25. Urassa DP, Nystrom L, Carlstedt A, Msamanga GI, Lindmark G. **Management of hypertension in pregnancy as a quality indicator of antenatal care in rural Tanzania.** African journal of reproductive health. 2003:69-76.

26. SPELLACY WN, MILLER SJ, WINEGAR A. **Pregnancy after 40 years of age.** Obstetrics & Gynecology. 1986;68(4):452-4.

27. Bashir A, Cheema MA, Mustansar M. **Maternal mortality 1991: results from a survey in Faisalabad city.** Specialist 1992; 9:47-52.

"Vision without action is merely a dream. Action without vision just passes the time. Vision with action can change the world."

Joel A. Barker

AUTHORSHIP AND CONTRIBUTION DECLARATION

Sr. #	Author-s Full Name	Contribution to the paper	Author=s Signature
1	Dr. Sadia Zahoor		
2	Dr. Tahira Malik		
3	Dr. Sonia Zulfiqat		