OUTCOME OF ECLAMPSIA IN PATIENTS ADMITTED TO ICU AT A TERTIARY CARE TEACHING HOSPITAL

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ABSTRACT

OBJECTIVE: To determine the outcome of eclampsia patients admitted to intensive care unit (ICU) of Ayub Teaching Hospital, Abbottabad.

METHODOLOGY: This retrospective descriptive study was carried out at the ICU of Ayub Teaching Hospital, Abbottabad, Pakistan. Case records of all patients presenting with eclampsia to the ICU from April 1, 2010 to 30 September 2011 were included in the study. Case records were reviewed and information about patients was collected and tabulated. The results were reported as frequency and percentages.

RESULTS: A total of 116 eclamptic patients were admitted to ICU in this period. Of these 30 (25.9%) patients developed complications and 18 (15.5%) patients died. Two (1.7%) patients left the ICU against medical advice and 2 (1.7%) were referred for nephrologist opinion. Sixty five (56.03%) of these patients were primigravida and 51 (43.97%) were multigravida. Almost all deaths occurred in summer months. Six (5.2%) patients developed acute tubular necrosis (ATN), 5 (4.3%) developed disseminated intravascular coagulation (DIC) while 4 (3.45 %) patients each developed abruptio placentae, HELLP syndrome and septicaemia. Other complications included acute renal failure (2.6%), and post-partum haemorrhage (2.6%).

CONCLUSION: Eclampsia is responsible for significant maternal morbidity and mortality in our set up. Mortality rate is 15.5% while ATN and DIC are the commonest complications of eclampsia in our patients.

KEY WORDS: Eclampsia, Outcome, HELLP syndrome, Acute Tubular Necrosis, Complications, Disseminated intravascular coagulation (DIC), Abruptio Placentae, Post-Partum Haemorrhage.

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INTRODUCTION

Eclampsia is defined as the development of convulsions and/or unexplained coma during pregnancy or post-partum in patients with signs and symptoms of pre-eclampsia.[1] Eclampsia is a leading cause of maternal and perinatal morbidity and mortality[2]. Around 585,000 women die each year of pregnancy related causes, 98% of them in developing countries.[3] Thirteen percent of these maternal deaths are due to hypertensive disorders of pregnancy, particularly eclampsia[3]. The incidence of eclampsia in Pakistan has been reported to be 120/10,000 deliveries in a study.[3] Another local study reported frequency of eclampsia as 1 in 25.5 deliveries in a tertiary care hospital of Peshawar, Pakistan.[4]

The reported incidence of eclampsia is usually higher in tertiary referral centres, in multifetal gestation, and in populations with no prenatal care.[5,6] Each year around 50,000 women dies due to pre-eclampsia or eclampsia and most of these deaths occur in developing countries.[7] Eclamspia is one of the commonest causes of maternal and perinatal mortality in Pakistan.[7-9] Complications associated with eclampsia include HELLP (Hemolysis, Elevated Liver enzymes, Low Platelet count) syndrome (3%), disseminated intra-vascular coagulation (DIC) (3%), renal failure (3%), cerebral haemorrhage or oedema, cardiac failure and adult respiratory distress syndrome (1%).[10]

There are few local studies available on outcome of eclampsia in obstetric and medical units of the major hospitals of the country.[7-9] We planned this retrospective study to determine the outcome of eclamptic patients admitted to the intensive care unit (ICU) of Ayub Teaching Hospital, Abbottabad, Pakistan.

METHODOLOGY

This retrospective study was conducted of all cases of eclampsia admitted to ICU of Ayub Teaching Hospital, Abbottabad during an 18 months period from April 2010 to September 2011. Standard protocols were used in the management of eclampsia patients.

Case records were reviewed and information about patients was collected and tabulated. We recorded the age, parity, mode of delivery, maternal mortality, any complications that arose in these patients and hospital stay. Data was analysed using SPSS-16. Results were reported as frequency and percentage.

RESULTS

In the 18 months study, a total of 116 patients were admitted to ICU for observation and out of these 116 patients, 30 (25.9%) patients had developed complications. All of these patients presented with fits and raised blood pressure.

Mean age of eclamptic patients was 26.25±5.00 years and majority of patients was in the age group 21-25 years (n=51; 43.96%) and 26-30 years (n=34; 29.31%). Mean duration of stay was 2.16±1.27 days. Table I is showing age distribution and duration of stay and other characteristics of 116 patients with eclampsia.

As Ayub Teaching Hospital serves as the only hospital for a large area of our province, it receives patients from many districts. Majority of patients was from Abbottabad (n=34; 29.31%) and Mansehra (n=32; 27.58%). The district wise distribution of patients with eclampsia is given in Table 1.

Of 116 patients that were admitted to ICU, 30 (25.86%) developed complications and 18 (15.52%) died. Two (1.72%) patients left the ICU against medical advice and were declared LAMA. Ninety two (79.31%) patients were sent back to the Gyne wards. Two (1.72%) patients were referred to Islamabad for a nephrologist opinion because of non-availability of nephrologist. These patients had been undergoing haemodialysis for acute renal failure. Two (1.72%) patients were referred to Medical unit for management of uncontrolled hypertension (Table II).

Of 30 patients who developed complications, 6 (5.2%) patients had acute tubular necrosis (ATN), 5 (4.3%) had developed disseminated intravascular coagulation (DIC) while 4 (3.45%) each had developed abruptio placentae, HELLP syndrome and septicaemia (Table III).

DISCUSSION

Eclampsia is a serious medical and obstetrical emergency and is a major cause of maternal morbidity and mortality throughout the world. Eclampsia is the 3rd leading cause of maternal mortality in Pakistan.[11] The mortality in our study population was 15.52% which is very high. A brief literature review revealed that the mortality from eclampsia is variable across different countries, ranging from 0%-1.8% in developed countries to as high as 15% in developing countries.[12] A South African study reported an 11.9% mortality from eclampsia.[13] A recent

TABLE-I: AGE DISTRIBUTION, AREA DISTRIBUTION, GESTATIONAL STATUS, MODE OF DELIVERY AND DURATION OF STAY OF 116 ECLAMPTIC PATIENTS

Characteristics		Frequency (n=116)	%age	Characteristics		Frequency (n=116)	%age
Age group	16–20 years	16	13.80%	Gestational Status	Primigravida	65	56.04%
	21-25 years	51	43.96%		Multigravida	51	43.96%
	26-30 years	34	29.31%	Mode of delivery	Normal Vaginal Delivery	71	61.2%
	31-35 years	10	8.62%		Emergency Lower Segment Caesarian section	45	38.8%
	36-40 years	4	3.44%	Area distribution	Abbottabad	34	29.31%
	41 years and above	1	0.86%		Mansehra	32	27.58%
Duration of Stay (Days)	1	41	35.5		Haripur	21	18.10%
	2	42	36.2		Batgram	19	16.36%
	3	17	14.7		Kohistan	04	3.44%
	4	09	7.8		Shangla	4	3.44%
	5	05	4.3		Azad Kashmir	1	0.86%
	7	01	0.86%		Torghar	1	0.86%

TABLE-II: OUTCOME OF ECLAMPTIC PATIENTS ACCORDING TO PARITY

Outcome	Multigravida (n=51)		Primigravida (n=65)		Total (n=116)	
	Frequency	%age	Frequency	%age	Frequency	%age
DIED	9	17.64%	9	13.84%	18	15.52%
Left Against Medical advice (LAMA)	1	1.96%	1	1.54%	2	1.72%
Shift Medical Ward	2	4.55%	0	0	2	1.72%
Referred to Nephrologist	1	1.96%	1	1.54%	2	1.72%
Shift back to ward	38	74.51%	54	78.46%	92	79.31%

TABLE-II COMPLICATIONS OF ECLAMPSIA

Complication	Number of patients (n=116)	Percentage
Acute Tubular Necrosis (ATN)	6	5.2%
Disseminated intravascular coagulation (DIC)	5	4.3%
Abruptio Placentae	4	3.45 %
HELLP# syndrome	4	3.45 %
Septicemia	4	3.45 %
Post-Partum Hemmorhage	3	2.6%
Acute Renal Failure	3	2.6%
Aspiration Pneumonia	1	0.86%
Total	30	25.9%

#Hemolysis, Elevated Liver enzymes, Low Platelet count

study in Faisalabad reported a mortality of 14.7% in eclampsia patients[7] while it was reported to be 16.9% in Peshawar[3], 9.8% in civil hospital Karachi[14], 11% in Nishtar Hospital Multan,[15] 9% in Faisalabad[16]and 3.6% in Shorkot.[17] Rauf B et al reported zero mortality in eclamptic patients in Hayatabad Medical Complex, Peshawar.[18] A previous study done at our hospital had reported a mortality of 30% from eclampsia.[19] An Indian study has reported a case mortality rate of 29.5% in India[20]. Another Indian study has reported mortality from eclampsia to be 12%.[21]

All of the patients included in this study were admitted for observation and management of eclampsia in their post-partum period. Majority (61.2%) of them had delivered normally and forceps or vaccum not used because the patient delivered normally without any complications. with one patient needing vacuum delivery. Rest of them had Emergency Lower segment Caesarian section done to deliver the babies. The incidence of eclampsia has been reported to be higher in Primigravida and nulliparous women[3] we made no such attempt at finding the incidence of eclampsia because eclampsia itself was our inclusion criterion and we were including all patients with eclampsia in our study. Still 65 (56.04%) patients were Primigravida and 51(43.96%) patients were multigravidae.

Mortality among multigravidae (17.64%) was more than the primigravida (13.84%). Although a previous study has reported a mortality of 30% at the same institution.[18] It is worth noting that the study was conducted in one unit of the hospital and that our study involved all the patients referred from all the units of gynecology and obstetrics. Acute Tubular Necrosis, DIC and placental abruption were among the top three complications that developed in these patients. A total of 30 patients developed some sort of complications and out of them 18 patients died. 4 out of 30 died of Abruptio Placentae (13.33%), 2 patients (6.66%) died of acute renal failure, 4(13.33%), each, died of DIC, HELLP syndrome and Septicaemia. Another interesting fact that we noted was that all of these deaths occurred in summer. There were a total of 7 deaths from April, 2010 to August 2010, and 9 deaths from March 2011 to July 2011. There was only one death in September 2011. Although we could not find a reason for these weather specific mortalities, yet it was an interesting finding.

The results of this study depict a not so rosy picture of the state of affairs. Level of antenatal care and proper follow up is seriously lacking. When patients present with eclampsia, doctors are not

left with many choices. There is a dire need of educating people about risk factors and features of this condition to be able to recognize it early and manage it. Any further delay risks the life of mother as well as the fetus. Illiteracy, poverty and poorly implemented healthcare system have been identified as the main risk factors for development of eclampsia.[3] A lot needs to be done to combat this problem including, but, not limited to, devising strategies to provide better healthcare to pregnant women by the Governmental and non-governmental departments, training of medical staff to recognize the disease, its complications and management, provision of better antenatal healthcare, and early referral to specialist doctors when symptoms start.

CONCLUSION

Eclampsia is responsible for significant maternal and perinatal morbidity and mortality. Mortality rate is 15.5% while ATN, DIC, abruptio placentae, HELLP syndrome and septicaemia are the commonest complications of eclampsia in our patients.

REFERENCES

1. Sibai BM. Diagnosis, prevention, and management of eclampsia. Obstet Gynecol 2005; 105(2): 402-10.
2. Duley L. Maternal mortality associated with hypertensive disorders of pregnancy in Africa, Asia, Latin America and the Caribbean. Br J Obstet Gynaecol 1992; 99(7): 547-53.
3. Shaheen B, Hassan L, Obaid M. Eclampsia, a major cause of maternal and perinatal mortality: A prospective analysis at a tertiary care hospital of Peshawar. J Pak Med Assoc 2003; 53(8): 346-50.
4. Noor S, Halimi M, Faiz NR, Gull F, Akbar N. Magnesium Sulphate in the prophylaxis and treatment of Eclampsia. J Ayub Med Coll Abottabad 2004; 16(2): 50-4.
5. Makhseed M, Musini VM. Eclampsia in Kuwait 1981-1993. Aust N Z J Obstet Gynaecol 1996; 36: 258-63.
6. Sibai BM. Eclampsia. VI. Maternal-perinatal outcome in 254 consecutive cases. Am J Obstet Gynecol 1990; 163: 1049-55.
7. Tabassum N, Umber A, Khan S. Eclampsia: A major cause of feto maternal mortality and morbidity? Ann King Edward Med Uni 2010; 16(3): 202-5.
8. Ahmad S, Nazli R, Lutfullah G. Frequency of eclampsia and maternal complications in a tertiary care facility of Peshawar. Pak J Med Res 2008; 47(4): 79-82.
9. Rathore R, Butt NF, Iqbal A, Khan MZU. Complications and outcome of patients of pre-eclampsia and eclampsia presenting to medical wards of Mayo Hospital Lahore. Ann King Edward Med Uni 2010; 16(1): 17-9.
10. Micheal BB. Eclampsia. Emer Med J 2000; 74: 1-10.
11. Bigdeli M, Zafar S, Assad H, Adbul Ghaffar A. Health system barriers to access and use of magnesium sulfate for women with severe pre-eclampsia and eclampsia in Pakistan: Evidence for policy and practice. PloS one, 2013; DOI: 10.1371/journal.pone.0059158
12. Ghulmiyyah L, Sibai B. Maternal Mortality From Preeclampsia/Eclampsia. Seminars Perinatol 2012; 36(1): 56-59.
13. Moodley J, Naicker RS. Mankowitz E. Eclampsia – a method of management. S Afr Med J 1983; 63: 530-535.
14. Ayesha K, Nargis S. Eclampsia: an aggressive approach is needed. Medical channel 1998: 4; 13-17.
15. Naseer D, Ataullah K, Nudrat E. Perinatal and maternal outcome of eclamptic patients admitted in Nishtar Hospital, Multan. J Coll Physician Surg Pak 2000; 10: 261-4.
16. Bashir A, Aleem M, Shagufta J. Community education and downward trend in maternal deaths due to eclampsia. Specialist Int 1996; 12: 147-54.
17. Shiraz S, Boota M, Shahzad S. Eclampsia. Professional Med J Mar 2006; 13(1): 27-31.
18. Rauf B, Karim R, Ali S, Jabeen R, Akhtar R. Effect of fit–delivery interval on maternal and fetal outcome in antenatal eclamptic patients. Khyber Med Univ J 2013; 5(3): 141-5.
19. Begum S, Aziz-un-Nisa, Begum I. Analysis of maternal mortality in a tertiary care hospital to determine causes and preventable factors. J Ayub Med Coll Abbottabad. 2003; 15(2): 49-52.
20. Swain S, Ojha KN, Prakash A, Bhatia BD. Maternal and perinatal mortality due to Eclampsia. Indian Paediatr. 1993; 30(6): 771-3.
21. Parkash A, Swain S, Seth A. Maternal mortality in India: Current status and strategies for reduction. Indian Pediatr. 1991; (12): 1395-400.

AUTHOR'S CONTRIBUTION

Following authors have made substantial contributions to the manuscript as under

MJ & MAA: Conception and design, Data collection, Drafting the manuscript, Final Approval of the manuscript

HZ: Data acquisition and analysis, Critical revision, Final Approval of the manuscript

CONFLICT OF INTEREST

Author declares no conflict of interest

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