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RESEARCH ARTICLE

A prospective study of fetomaternal outcomes in patients with eclampsia in a tertiary care hospital in Jharkhand

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ABSTRACT

Objectives: To determine fetomaternal outcomes in patients with eclampsia. **Methods:** This prospective observational cohort study was conducted at Rajendra Institute of Medical Sciences, Ranchi, Department of Obstetrics and Gynaecology from April 2019 to September 2020. 200 patients who came with presence of seizures or coma (eclampsia) which could not be attributed to other causes and admitted in the emergency (labour room) were included in the study. The fetomaternal outcomes were determined among all the enrolled patients in terms of mortality, mode of delivery and baby weight. **Results:** The mean age of the patients were 22.7 years with 69.5% primi and 21.5% multigravida. Antepartum eclampsia was present in 90% cases and postpartum eclampsia was present in 10% cases. Induction for labour was done in 53.30% patients, with cerviprime gel being the most common method. LSCS were performed in 30.27% cases and instrumental delivery in 4.86%; most common indication of LSCS was fetal distress. Preterm occurred in 42 (25.76%) patients. Maternal death occurred in 37 (18.50%) patients; most common cause being acute pulmonary edema followed by disseminated intravascular coagulation (DIC). Neonatal death occurred in 17(10.83%) babies for which birth asphyxia and prematurity were the common causes. **Conclusion:** The findings of the study revealed that eclampsia is significant obstetric emergency which results in significant maternal as well as fetal morbidity and mortality. The knowledge, screening and proper management may help in the result of a better outcome in such patients.

Keywords: Eclampsia, fetomaternal, seizures, outcomes, mortality.

During postpartum period or pregnancy if unexplained coma, or convulsion develops, it is termed as eclampsia. Eclampsia is categorized as antepartum (before labour, 38-53%), intrapartum (during labour, 15-20%), and postpartum (after labour, 11-44%) depending on the time of convulsions occurrence.[1] Globally, eclampsia is responsible for 12% of all maternal mortality as per WHO.[2]

Perinatal maternal morbidity and mortality during eclampsia is attributed majorly to transient neurological deficit, renal insufficiency [3] and hepatic dysfunction.[4] Complications related with pregnancy like HELLP syndrome, abruptio placentae are also common and are risky for both mother and foetus.[5]

India, being a developing country, with a higher prevalence of eclampsia (3.7%) and a reason for maternal mortality (2.2-23%),[6] it becomes important to increase the data about the demographic and clinical characteristics of eclampsia and the related fetomaternal outcomes in different parts of the country. Here in this study, we prospectively evaluated the outcomes of patients presenting with eclampsia in a tertiary care hospital.

Methods

A prospective observational cohort study was conducted in the department of obstetrics and gynaecology in Rajendra Institute of Medical Sciences, Ranchi, from April 2019 to September 2020. All patients admitted in the emergency labour room with the history of convulsions were included. Any patient with chronic hypertension, chronic renal disease,

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connective tissue disorder, and preeclampsia was excluded.

The study sample size was based on a previous study by Dhanapal M et al [7] who observed 8.3% mortality due to eclampsia. Choosing these as reference values with 4% margin of error and 5% level of significance the minimum sample size that was required for the study was 183 patients. However, to decrease the margin of error, we enrolled 200 patients.

Written informed consent was obtained from all the patients or their attendants before enrolling them into the study. A detailed history of all the included patients was taken which comprised of age, religion, socio-economic status, past history, family history, education, residence, gravida and gestational age.

The clinical examination included assessment of general condition of the patient, vitals - pulse, blood pressure, pallor, icterus, edema and individual organ systems. Obstetric examination: symphysio - fundal height, abdominal girth, lie, presentation, liquor volume, foetal movement, foetal heart rate was recorded. Examination was pertinent to note the signs and symptoms of hypertension and low haemoglobin such as pallor and edema. Blood pressure was recorded (systolic and diastolic) for all women.

The patients were subjected to blood investigations:

a. Complete blood count
b. Platelet count, bleeding time(BT) and clotting time (CT)
c. Urea, creatinine
d. Uric acid
e. Urinary total protein
f. Total bilirubin
g. Liver enzymes - aspartate amino transferase and alanine amino transferase.
h. Lactate dehydrogenase.
i. Blood grouping
j. Serum electrolyte
k. Sonographic evaluation of fetoplacental profile.

The patients were followed up for the outcomes of pregnancy in terms of induction of labour, term/pre-term, type of delivery, indication of caesarean delivery and mortality. The induction of labour was done as per the hospital protocol by cerviprime gel or misoprost. The Bishop score was also recorded at the time of labour and delivery. The eclampsia in patients were managed as per the hospital protocol by using magnesium sulphate, as per the Pritchard regimen - 4gm (20% solution)IV over 3-5 minute followed by 10 gm (50% solution) deep IM (5 g in each buttock) followed by maintenance dose 5gm (50% solution) IM 4 hourly in alternate buttock.[8]

The neonatal outcomes were followed in terms of baby weight, Apgar scores, admission and mortality. Final baby outcome on 7th day of birth was also recorded. The assessment and diagnosis of eclampsia was made according to the criteria of ACOG guidelines.[9]Bishop score was recorded and assessed as per the modified Bishop scoring system.[10]

Statistical analysis: The presentation of the categorical variables was done in the form of number and percentage (%). On the other hand, the presentation of the continuous variables was done as mean ± SD and median values. The data entry was done in the Microsoft EXCEL spreadsheet and the final analysis was done with the use of statistical package for social sciences (SPSS) software ver 21.0.

Results

Table 1: Distribution of socio-demographic and clinical characteristics of study subjects

Socio-demographic and clinical characteristics	Frequency	Percentage
Age (years)		
≤ 20	80	40.00%
21-30	108	54.00%
31-40	12	6.00%
Mean ± SD	22.72 ± 4.2	
Median(IQR)	22(20-24)	
Range	17-39	
Religion		
Christian	41	20.50%
Hindu	131	65.50%
Muslim	28	14.00%
Socio-economic status		
Low	160	80.00%
Middle	33	16.50%
Upper	7	3.50%
Past history of hypertension		
No	183	91.50%
Yes	17	8.50%
Education		
Illiterate	114	57.00%
Literate	86	43.00%
Rural/urban		
Rural	147	73.50%
Urban	53	26.50%
Antenatal status		
Booked	51	25.50%
Un-booked	149	74.50%
Gravida/parity		
Multigravida	43	21.50%
Multipara	6	3.00%
Primigravida	139	69.50%
Primipara	12	6.00%

Mean age of the patients in the study was 22.72 ± 4.2 years. 54.00% were in the age group of 21-30 years. Most of the patients were Hindus (65.50%), who belonged to low socioeconomic status (80.00 %), and were from rural area

Table 2: Distribution of signs, symptoms and investigations of study subjects

Signs, symptoms and investigations	Frequency	Percentage
Edema		
Absent	36	18.00%
Present	164	82.00%
General condition		
Conscious	75	37.50%
Unconscious	125	62.50%
Proteinuria		
Trace	1	0.50%
1+	37	18.50%
2+	111	55.50%
3+	50	25.00%
4+	1	0.50%
Serum electrolyte		
Deranged	21	10.50%
WNL	179	89.50%
Pallor		
No	40	20.00%
Mild	78	39.00%
Moderate	76	38.00%
Severe	6	3.00%
Haemoglobin(gm/dL)		
Mean ± SD	9.89 ± 1.32	
Median(IQR)	10(9.3-10.5)	
Range	4-12.8	
Systolic blood pressure(mm of Hg)		
Mean ± SD	153 ± 24.54	
Median(IQR)	150(140-160)	
Range	80-250	
Diastolic blood pressure(mm of Hg)		
Mean ± SD	101.48 ± 17.23	
Median(IQR)	110(90-110)	
Range	40-180	
BT(Bed side in minutes)		
Mean ± SD	2.17 ± 0.94	
Median(IQR)	1.83(1.5-2.667)	
Range	0-4.83	
CT(Bed side in minutes)		
Mean ± SD	4.98 ± 0.99	
Median(IQR)	4.83(4.5-5.5)	
Range	2.33-9.25	
Blood urea(mg/dL)		
Mean ± SD	52.31 ± 22.89	
Median(IQR)	48(40-60)	
Range	15-161	
Serum creatinine(mg/dL)		
Mean ± SD	1.25 ± 0.84	
Median(IQR)	1(0.8-1.4)	
Range	0.4-6.4	
SGOT(U/L)		
Mean ± SD	84.81 ± 170.88	
Median(IQR)	50(42.75-70)	
Range	19-1728	
SGPT(U/L)		
Mean ± SD	70.28 ± 84.88	
Median(IQR)	55(43.75-75)	
Range	15-764	
SAP(U/L)		
Mean ± SD	202.94 ± 144.06	
Median(IQR)	146.5(120-223.25)	
Range	40-1000	
Serum LDH(IU/L)		
Mean ± SD	533.48 ± 246.89	
Median(IQR)	475(428.25-550)	
Range	85-1906	
Serum uric acid(mg/dL)		
Mean ± SD	6.57 ± 5.37	
Median(IQR)	6.1(5.575-6.625)	
Range	0.8-62	
Platelets count(lakh/cumm)		
Mean ± SD	2.01 ± 0.95	
Median(IQR)	1.8(1.2-2.9)	
Range	0.51-4.4	

(73.50%). Only 43.00% were literate. 8.50% patients had history of hypertension. 25.50% patients were booked. Number of Multigravida was 21.50% (table 1).

Clinically, edema was present in 82.00% patients. Proteinuria showed 2+ in 55.50% patients and 3+ in 25% patients. Pallor was mild and moderate in 39% and 38% patients, respectively (table 2). Blood group of 66.50% of patients was O+ve followed by B+ (14.50%), A+ (12.50%) and AB+ (6%). Only 1 patient had O-ve blood group.

Antepartum eclampsia (APE) was present in 90% cases and postpartum eclampsia (PPE) was present in 10% cases.

In the present study, induction for labour was done in 53.30% patients for which Cerviprime gel and Cerviprime gel/misoprost were used in 96.91% and 3.09% patients, respectively. Mean Bishop score of study subjects was 6.09 ± 2.61. Mean admission-delivery interval (hour) of study subjects was 4.71 ± 2.67.

Maternal death occurred in 37 (18.50%) patients. In 29.73% of patients, cause of maternal death was acute pulmonary edema followed by DIC (13.51%), CVA (10.81%), cardiac failure (8.11%), septic shock (8.11%), acute pulmonary edema + severe anaemia (5.41%), acute renal failure (5.41%), and septicaemia (5.41%).Rest of the 163(81.5%) patients were delivered. In 98 (60.12%) of patients, mode of delivery was vaginal delivery followed by LSCS (34.35%) and instrumental delivery (5.52%). In 48.21% of patients, indication of LSCS was foetal distress followed by failed induction (16.07%), cephalopelvic disproportion (7.14%), foetal distress + oligohydramnios (5.36%), obstructed labour (5.36%), foetal distress + IUGR (3.57%), previous caesarean section + scar tenderness (3.57%) and breech presentation (3.57%). In 74.24% cases, term birth was seen while preterm occurred in 25.76% cases (table 3).

Among the 163 neonates born, 6 (3.7%) were still births and 157(96.3%) were alive. Mean value of Apgar score at 1 minute and Apgar score at 5 minute of babies was 6.94 ± 1.5 and 9.02 ± 1.74. Mean baby weight (Kg) was 2.45 ± 0.58. 26.75% babies were admitted. Among the 157 live births, neonatal deaths occurred in 17 (10.83%) babies with common causes being birth asphyxia (n=6) and prematurity (n=5) (table 4).

Table 3: Maternal outcomes

Variables	Frequency	Percentage
Maternal death		
No	163	81.50%
Yes	37	18.50%
Cause of maternal death		
Acute pulmonary edema	11	29.73%
Acute pulmonary edema + Acute renal failure	1	2.70%
Acute pulmonary edema + Severe anaemia	2	5.41%
Pulmonary aspiration pneumonia	1	2.70%
DIC	5	13.51%
CVA	4	10.81%
Cardiac failure	3	8.11%
Acute renal failure	2	5.41%
Acute renal failure + Septicaemia	1	2.70%
Septic shock	3	8.11%
Hypovolemic shock	1	2.70%
Severe anaemia + Pulmonary embolism	1	2.70%
Septicaemia	2	5.4%
Delivered	163	81.5%
Instrumental delivery	9	5.52%
LSCS	56	34.35%
Vaginal delivery	98	60.12%
Indication of LSCS		
Foetal distress	27	48.21%
Foetal distress + oligohydramnios	3	5.36%
Foetal distress + IUGR	2	3.57%
Foetal distress + IUD	1	1.79%
Failed induction	9	16.07%
Cephalopelvic disproportion	4	7.14%
Obstructed labour	3	5.36%
Previous caesarean section + scar tenderness	2	3.57%
Twin with 1st breech	1	1.79%
Breech presentation	2	3.57%
Hand prolapse	1	1.79%
Compound presentation	1	1.79%
Term/preterm		
Preterm	42	25.76%
Term	121	74.24%

Table 4: Neonatal outcomes

Variables	Frequency	Percentage
Baby status (n=163)		
Alive	157	96.3%
Still birth	6	3.7%
Gender of baby		
Female	54	34.4%
Male	103	65.6%
Apgar score at 1 minute		
Mean ± SD	6.94 ± 1.5	
Median(IQR)	8(6-8)	
Range	3-9	
Apgar Score at 5 minute		
Mean ± SD	9.02 ± 1.74	
Median(IQR)	10(8-10)	
Range	4-10	
Baby weight(Kg)		
Mean ± SD	2.45 ± 0.58	
Median(IQR)	2.6(2-2.8)	
Range	0.85-3.5	
Baby admitted or not		
No	115	73.25%
Yes	42	26.75%
Neonatal death		
No	140	89.17%
Yes	17	10.83%
Cause of neonatal death		
Birth asphyxia	6	35.29%
Birth asphyxia/HIE	1	5.88%
Breathing difficulty with pulmonary atresia	1	5.88%
EOS	1	5.88%
HIE	1	5.88%
Prematurity	5	29.41%
Prematurity+VLBW	1	5.88%
SGA+RD+EOS	1	5.88%

Discussion

Eclampsia being a serious convulsive condition and pregnancy being an emotional state for the mother and a life creating stage for the foetus, its management demands an intricate care for a successful delivery without many complications.

The definitive treatment of eclampsia is delivery, irrespective of gestational age. Therefore, the patient must be delivered within 24 hours in case of severe preeclampsia, and within 12 hours in a patient with eclampsia.[11]

In the present study, in 98 (60.12%) of patients, mode of delivery was vaginal delivery followed by LSCS (34.35%) and instrumental delivery (5.52%). In 48.21% of patients, indication of LSCS was foetal distress followed by failed induction (16.07%), and cephalopelvic disproportion in 7.14%.

In a similar study as present study, Pillai et al, reported that 64.54% underwent cesarean section. The most common indication for caesarean section was previous caesarean section because trial of labour was not done in the patients and repeat caesarean was done after stabilizing the patient. In some of the cases, an overlap of indications such as doppler abnormalities in addition to failed induction and abruption with nonreassuring fetal status was noted. Raji et al[12] reported that LSCS was performed in 61.65% babies and natural labor in 31.51% cases. Indications for LSCS were unfavorable cervix in 56.67% and failed induction in 38.87%. In study by Ajah et al,[13] 51.7% were delivered by caesarean section and 48.3% by vaginal delivery.

In present study, in majority (74.24%) of deliveries, term birth was seen. Preterm occurred in only 42 out of 163 births (25.76%). Among the previous studies, Pillai SS et al,[11] reported that 65% of the cases had a preterm delivery, which was due to the premature induction of labour. Tufnell et al,[14] reported that incidence of prematurity was 65.3%. The high incidence of preterm delivery may be due to the fact of the early intervention and induction of labour or LSCS done to divert further maternal and perinatal complications. Ajah LO et al,[13] also reported that preeclampsia was associated with preterm delivery.

Eclampsia is one of the leading causes of maternal mortality and worldwide it varies from 1.8-27.5%. Almost one third of patients suffer from complications.[15,16] Major complications of eclampsia include placental abruption (7-10%), DIC (7-11%), HELLP syndrome (9.7-20%), acute renal failure (5-9%), pulmonary edema (3-5%), aspiration pneumonia (2-3%), cerebral hemorrhage and cardiopulmonary arrest (2-5%).[17] Maternal complication such as pulmonary oedema, intracranial haemorrhage, DIC, aspiration pneumonitis, acute renal failure etc. are serious factor resulting in maternal mortality and morbidity.[18]

In the present study, maternal deaths occurred in 18.50% patients. Cause of maternal death in 29.73% of patients was acute pulmonary edema followed by DIC (13.51%), CVA (10.81%), cardiac failure (8.11%), and septic shock in 8.11% patients. In comparison, Raji et al[12] reported amaternal mortality of 6.16% where out of 146 cases, 24% cases developed complications such as ARDS in 8 (5.47%), pulmonary edema in 2 (1.36%), CVA 6 (4.1%), DIVC 1 (0.68%), renal failure 3 (2.05%), abruptio placenta 6(4.10%), HELLP syndrome 5 (3.42%), ARF with DIVC 1(0.68%), HELLP with IVH 1 (0.68%), and HELLP syndrome with acute kidney injury 2 (1.36%). In the study by Adamu AM et al,[19] 29.4% women died and major maternal complications were aspiration pneumonitis (23.9%) and pulmonary edema (16.3%), hyperpyrexia (17.9%), acute renal failure (11.4%), and cerebrovascular accidents 9.8%. Begum F et al[20] reported less mortality rate as compared to present study as 6.3% women died. About 7% of patients had acute renal failure, 16.7% CVA, 14.6% HELLP syndrome, and 39.6% pulmonary edema. Common causes of maternal deaths (5.36%) as reported by Ghimire S[21] were pulmonary edema, aspiration pneumonia, cerebrovascular accidents and HELLP syndrome.

Foetal complications are primarily because of the uteroplacental insufficiency resulting in intrauterine growth restriction, low birth weight babies, intrauterine foetal death, and complications due to prematurity. The most common causes of foetal death are prematurity and birth asphyxia.[11] In the present study, 3.7% babies were still births. Mean Apgar score at 1 minute and 5 minutes were 6.94 ± 1.5 and 9.02 ± 1.74, respectively. Mean baby weight was 2.45 ± 0.58 Kg. In comparison, Agida ET et al [22] reported that in 59 cases with eclampsia, 37 babies were delivered live while 8 stillbirths were recorded. 13.0% babies had very low birth weight, 30.4% had low birth weight and 34.8% had normal birth weight. Jido TA et al [23] reported that stillbirth rate was 22.5%; birth asphyxia was recorded in 39.1% and low birth weight in 25.8%.

An analysis of foetal outcome by Praveenkumar AM et al,[24] revealed that the babies born to mothers with eclampsia were small for gestational age in 46.51% cases while the incidence of intrauterine death was 25.58% and neonatal mortality was seen in 34.88%. The overall perinatal mortality was found to be 60.46%.In the present study, neonatal deaths occurred in 10.83% babies. In majority (35.29%) of babies, cause of neonatal death was birth asphyxia followed by prematurity (29.41%).In study by Raji et al, 24.66% were dead born. 60% babies had <2.5kg and 30% had birth weight between 2.5-3 kg. Causes of death were prematurity and septicaemia in 41.38% babies, prematurity and respiratory distress syndrome in 31.03% babies, birth asphyxia in 13.8% babies, and 13.8% died due to IUGR/meconium aspiration syndrome. Higher number of neonatal deaths was reported by Jido TA as the stillbirth rate was 22.5%.

Limitations of the study:The limitation of this study was the lack of control group due to which fetomaternal complications cannot be compared among women with eclampsia and without eclampsia. Although the sample size of the study was good, but being a single centre hospital based study, the results of the fetomaternal complications in such women may need further generalisation.

Conclusion

The findings of the study revealed that eclampsia is significant obstetric emergency which results to significant maternal as well as fetal morbidity and mortality. Increasing incidence of eclampsia can be decreased by proper diagnosis, proper antenatal care, admission to hospital, and treatment of the mild and severe preeclampsia cases. Doppler flow studies of umbilical artery can be used for an early prediction of pre-eclampsia and such patients can be taken for early counseling, aspirin treatment and any further intervention. But eclampsia can take place bypassing the state of preeclampsia, and thus it is not preventable condition always. There should be improvement in antenatal care; early diagnosis should be prompted and primary management and referrals may need to be taken.

Conflict of interest: None. **Disclaimer:** Nil.

References

1. Ayala-Ramírez P, Serrano N, Barrera V, Bejarano JP, Silva JL, Martínez R, et al. Risk factors and fetal outcomes for preeclampsia in a Colombian cohort. Heliyon. 2020; 6: e05079.
2. WHO Reduction of maternal mortality. A joint WHO/UNEPA/UNICEF/World Bank Statement, Geneva: 1999.
3. Miquil M, Salmi S, Moussaid I, Benyyournes R. Acute renal failure requiring dialysis in Obstetrics. Neprol Theor. 2011; 7(3):178-81.
4. Ross MG, Meyer BA, Telavera F, Ramus RM. Eclampsia Overview. Medscape. 2011:1-13.
5. de-Ojo IP, Loto OM. Outcome of eclampsia in OAUTH Ile-Ife. Nig J Clin Pract. 2008;11(3): 279-84.
6. Nobis PN, Hajong A. Eclampsia in India through the decades. J Obstet Gynaecol India. 2016; 66 (Suppl 1):172-6.
7. Dhanapal M, Sengodan SS, Murugesan P. Eclampsia: a retrospective study in a tertiary care centre. Int J Reprod Contracept Obstet Gynecol. 2017; 6: 3604-6.
8. Konar H. DC Dutta's Textbook of Obstetrics. 9th edition. New Delhi: Jaypee Brothers Medical Publishers Pvt Ltd; 2018.
9. American College of Obstetricians and Gynecologists. ACOG Practice bulletin no. 134: fetal growth restriction. Obstet Gynecol. 2013; 121:1122-33.
10. El-Mekkawi SF, Hanafi S, Khalaf-Allah AE, Abdelazim IA, Awadalla AM, et al. Cervical length versus modified Bishop's score for prediction of successful labor. J Basic Clin Reprod Sci. 2017; 6(1):117-22.
11. Pillai SS. Fetomaternal outcome in severe preeclampsia and eclampsia: a retrospective study in a tertiary care centre. Int J Reprod Contracept Obstet Gynecol. 2017; 6: 3937-41.
12. Raji C, Poovathi M, Nithya D. Prospective study of fetomaternal outcome in eclampsia in a tertiary care hospital. Int J Reprod Contracept Obstet Gynecol. 2016; 5: 4329-34.
13. Ajah LO, Ozonu NC, Ezeonu PO, Lawani LO, Obuna JA, Onwe EO. The feto-maternal outcome of preeclampsia with severe features and eclampsia in Abakaliki, South-East Nigeria. J Clin Diagn Res. 2016; 10(9): QC18-QC21.
14. Tufnell DJ, Jankowicz D, Lindow SW, Lyons G, Mason GC, Russell IF, et al. Outcome of severe preeclampsia/eclampsia. Br J Obstet Gynecol. 2005; 112: 875-80.
15. Rahmani MTH, Kamal MTF. Clinico pathological study of pre eclampsia. Biomedica. 2000; 16: 60-5.
16. Gilani S, Hussan L. Eclampsia a major cause of maternal mortality. J Postgrad Med Inst. 2002; 16: 97.
17. Sibai BM, Barton JR. Expectant management of severe preeclampsia remote term patient selection, treatment and delivery indication. Am J Obstet Gynecol. 2007; 196(6): 514-9.
18. Chaitra S, Jayanthi, Sheth AR, Ramaiah R, Kannan A, Mahantesh M. Outcome in hypertension complicating pregnancy in a tertiary care center. The New Indian Journal of OBGYN. 2017; 4(1): 42-6.
19. Adamu AN, Ekele BA, Ahmed Y, Mohammed BA, Isezuo SA, Abdullahpi AA. Pregnancy outcome in women with eclampsia at a tertiary centre in northern Nigeria. Afr J Med Med Sci. 2012; 41(2): 211-9.
20. Begum F, Bedoura S, Umme Z, Farhana D, Asaduzzaman SM. Fetomaternal outcome of eclampsia. KYAMC J. 2018; 9(3):120-4.
21. Ghimire S. Eclampsia: feto-maternal outcomes in a tertiary care centre in Eastern Nepal. J Nepal Med Assoc. 2016; 54(201): 24-8.
22. Agida ET, Adeka BI, Jibril KA. Pregnancy outcome in eclamptics at the University of Abuja Teaching Hospital, Gwagwalada, Abuja: a 3 year review. Niger J Clin Pract. 2010; 13(4): 394-8.
23. Jido TA. Ecalmpsia: maternal and fetal outcome. Afr Health Sci. 2012; 12(2): 148-52.
24. Praveenkumar AM, Patil R, Pachpande V. Maternal and fetal outcome in eclampsia. Ann Int Med Den Res. 2017; 3(2): OG01-OG06.

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