

# A study of maternal and fetal outcomes in eclampsia at a tertiary care centre

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## Abstract

**Background and objective:** Eclampsia, in pregnancy is the second leading cause of morbidity and mortality in United states, constitutes almost 15% of pregnancy related deaths and is the major risk factor for fetal mortality and morbidity. Present study was carried out to find out maternal and fetal outcome in eclampsia patients. **Materials and method:** The study was conducted at a tertiary care centre over a span of 2 years. Out of the total number of deliveries conducted about 1124 cases had pre-eclampsia out of which 186 patients had eclampsia. Various maternal and neonatal factors were studied. **Results and Conclusion:** The maximum incidence of eclampsia (51.61) was in the age group of 21 to 25. In our study eclampsia was found more common in multiparous women. About 89.25 percent of the cases had to deliver by Lower segment caesarean section. The most common indication was in these patients of eclampsia was foetal distress. Majority of subjects had antepartum eclampsia (98.39 percent). The commonest complication found in our study in the patients of eclampsia was abruption placenta which is 2.15 percent. Support. About 3.23 percent was the rate of maternal death in our study. About 63.92 percent of the babies were low birth weight. 28.87 percent of the babies were premature. The most common reason for the neonatal death was respiratory distress due to meconium aspiration.

**Key Word:** Eclampsia, Foetal, maternal, birth weight, complication

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## INTRODUCTION

The country's performance in the field of obstetrics and neonatal care can be measured by its incidence of maternal and perinatal mortality<sup>1</sup>. Among the various maternal and fetal factors which lead to the perinatal loss, maternal hypertension is an important one. Maternal eclampsia and its adverse effects is well known, some of the severely hypertensive patients have normal babies while some mildly hypertensive patients have intra uterine deaths<sup>2,3</sup>. Some of the variable factors in Eclampsia lead to this obvious difference in the perinatal outcome, for example the maternal age, parity of the patient, antenatal care, the timing and the nature of

delivery. Similarly the biochemical profile and the degree of proteinuria can affect the neonatal outcome. Eclampsia, in pregnancy is the second leading cause of morbidity and mortality in United states, constitutes almost 15% of pregnancy related deaths and is the major risk factor for fetal mortality and morbidity<sup>4,5</sup>. Present study was carried out to find out maternal and fetal outcome in eclampsia patients.

## MATERIALS AND METHOD

**Study place:** Tertiary care hospital from Vidharba region of Maharashtra.

**Study period:** 18 months.

**Study design:** Cross sectional.

**Study population:** Total number of ante natal mothers admitted for delivery in department of obstetrics of our tertiary care institute in given study period.

### Inclusion criteria

- Antenatal mothers diagnosed with eclampsia
- Patients who has given written informed consent

### Exclusion criteria

- Antenatal mothers who are known cases of hypertension and heart disease
- Patients presenting with convulsions due to other cause.

## METHODOLOGY

Approval from institutional ethics committee was taken. The study was conducted at a tertiary care centre over a span of 2 years. Out of the total number of deliveries conducted about 1124 cases had pre-eclampsia out of which 186 patients had eclampsia. These cases were evaluated by detailed history, thorough clinical examination and investigations. Maternal variables analyzed were age, parity, booking status, timing of eclampsia, duration of pregnancy, mode of delivery and maternal complications. Fetal outcome variables were preterm birth weight, gender and complications after birth. Maternal and fetal outcome variables were presented as frequencies and percentages.

## RESULTS AND OBSERVATIONS

**Table 1:** Distribution of the study subjects based on age group

Age group	Frequency	Percentage
18 to 20	65	34.95
21 to 25	96	51.61
26 to 30	14	7.53
>30	11	5.91
Total	186	100.00
Mean	22.76	
SD	3.80	
Range	19 to 36	

Majority of the study subjects were in the age range of 21 to 25 years followed by 18 to 20 years and a very few in the range of more than 26 years. The mean age of the study subjects was  $22.76 \pm 3.80$  years with maximum of 36 years and minimum of 19 years.

**Table 2:** Distribution of the study subjects based on gestational weeks

Gestational weeks	Frequency	Percentage
<37	55	29.57
>37	131	70.43
Total	186	100.00
Mean	37.25	
SD	4.11	
Range	21+1 to 41	

Majority of the study subjects were having gestational weeks of more than 37 weeks with mean gestational age of  $37.25 \pm 4.11$  weeks. The maximum was 41 weeks and minimum was 21 +1 weeks.

**Table 3:** Distribution of the study subjects based on Gravida

Gravida	Frequency	Percentage
Primi	51	27.42
Multi	135	72.58
Total	186	100.00
Range	0 to 6	

Majority of the subjects were multi gravida in our study with gravidity range of 0 to 6.

**Table 4:** Distribution of the study subjects based on booking status

Booking status	Frequency	Percentage
Booked	0	0
Emergency	186	100.00
Total	186	100.00

All the cases which we encountered were emergency cases at the tertiary centre. None of the cases were booked at the centre itself.

**Table 5:** Distribution of the study subjects based on mode of delivery

Mode of delivery	Frequency	Percentage
LSCS	166	89.25
Vaginal	19	10.22
Induced abortion	1	0.54
Total	186	100.00

About 89.25% of the cases delivered by C section, 10.22% cases delivered vaginally and one case was induced abortion. The commonest indication of LSCS in these patients of eclampsia was fetal distress and secondly poor bishops score.

**Table 6:** Distribution of the study subjects based on timing of eclampsia

Timing of eclampsia	Frequency	Percentage
Antepartum	183	98.39
Ante + post	1	0.54
Postpartum	2	1.08
Total	186	100.00

Majority of the subjects had antepartum eclampsia (98.39%) followed by 2 cases with post partum eclampsia and one case with both antepartum and post partum period.

**Table 7:** Distribution of the study subjects based on maternal complications

Maternal complications	Frequency	Percentage
Abruption	4	2.15
DIC	0	0
HELLP	1	0.54
ARF	2	1.08
Aspiration	1	0.54
Intra cranial haemorrhage	2	1.08
Ventilatory support	6	3.23
ICU admission	6	3.23
Maternal death	6	3.23

About 2.15% had abruptio placenta, 0.54% had HELLP, 1.08% had acute renal failure, 0.54% had aspiration and 1.08% had intra cranial haemorrhage. Further, 6 patients needed ICU admission with ventilatory support. About 3.23% was the rate of maternal deaths in our study.

**Table 8:** Distribution of the study subjects based on birth weight (n=191)\*

Birth weight	Frequency	Percentage
<2.5kg	121	63.92
≥2.5kg	70	36.08
Total	191	100.00
Mean	2.11	
SD	0.68	

\*5 cases had twins About 63.92% of the babies were low birth weight and 36.08% were normal birth weight. The mean birth weight of the babies was  $2.11 \pm 0.68$  kgs.

**Table 9:** Distribution of the study subjects based on gender (n=191)\*

Gender	Frequency	Percentage
Male	101	52.06
Female	90	47.94
Total	191	100.00

\*5 cases had twins Majority of the babies were male in our study (52.06%).

**Table 10:** Distribution of the study subjects based on neonatal complications (n=191)\*

Neonatal complications	Frequency	Percentage
Neonatal death	29	14.95
Prematurity	56	28.87
Low birth weight	124	63.92
NICU admission	64	32.99

\*5 cases had twins Among the 191 births, 14.95% of them did not survive, 28.87% were pre mature, 63.92% were low birth weight and 32.99% had to be admitted in NICU for treatment after delivery.

## DISCUSSION

Approximately 1 in 2000 deliveries is complicated by eclampsia in developed countries, whereas the incidence in developing countries varies from 1 in 100 to 1 in 1700 cases. Although the incidence and mortality from eclampsia has fallen dramatically over the past decades due to better antenatal care, the associated maternal and fetal morbidity and mortality is still significant<sup>1</sup>. With this background we conducted a study to find the fetal and maternal complications associated with eclampsia at our tertiary care setup. It was a cross sectional study conducted in the department of obstetrics and gynaecology for a period of two years. Our data has been compared with research done across the world in the following pages.

### AGE DISTRIBUTION

**Present study:** Majority of the study subjects were in the age range of 21 to 25 years followed by 18 to 20 years and a very few in the range of more than 26 years. The mean age of the study subjects was  $22.76 \pm 3.80$  years with maximum of 36 years and minimum of 19 years. Laxmi RC *et al*<sup>6</sup> reported that the most common age group to be 15 to 35 years. Kumari S *et al*<sup>2</sup> reported that

the most common age group was 21 to 25 years. Yoga Laxmi SK *et al*<sup>8</sup> reported that the majority of the subjects in their study were 20 to 30 years age group (39.5%). Raji C *et al*.<sup>9</sup> reported that the most common age group was 20 to 25 years in 78.8% of their patients. Patel PC *et al*<sup>10</sup> inferred that cases with eclampsia had the most common age group to be 21 to 25 years (47.2%). Agarwal MP *et al*<sup>11</sup> reported that the most common age group to be 21 to 25 years in 41.86% of their sample. Dagdeviren H *et al*<sup>12</sup> the mean age was 35 years with minimum of 17 years and maximum of 54 years. Shahzad N *et al*<sup>13</sup> reported that the mean age was  $25.17 \pm 4.9$  years with maximum of 40 years and minimum of 18 years. The most common age group reported by them was 20 to 25 years. Ngwenya S *et al*<sup>14</sup> reported that the mean age was  $27.7 \pm 7.4$  years in their study. Qadir M *et al*<sup>15</sup> reported that the most common age group was 15 to 25 years in their study. The most common age group in all above studied with was in concordance with our study was the age range of 20 to 25 years. This age is a productive age group that is being affected. Good antenatal care and health education targets to prevent these complications during pregnancy.

### GESTATIONAL WEEKS

**Present study:** Majority of the study subjects were having gestational weeks of more than 37 weeks with mean gestational age of  $37.25 \pm 4.11$  weeks. The maximum was 41 weeks and minimum was 21 +1 weeks. Laxmi RC *et al*<sup>6</sup> reported that most common gestational age was more than 37 weeks which was 42.86% of their sample. Pillai SS *et al*<sup>16</sup> reported that 33 to 36 weeks was the most common gestational age which was in 40% of their sample. Kumari S *et al*<sup>7</sup> reported that most common gestational age was more than 36 weeks in their study. Yoga Laxmi SK *et al*<sup>6</sup> reported that the most common gestational age was 22 to 24 weeks which was in 41.3% of their sample. Raji C *et al*<sup>9</sup> reported that majority of their sample had gestational weeks was 37 to 40 weeks in 53.85%. Agarwal MP *et al*<sup>11</sup> reported that more than 37 weeks was the most common gestational age in 34.88%. Dagdeverin H *et al*<sup>12</sup> reported that the mean gestational age was 36 weeks with minimum of 20 weeks and maximum of 41 weeks. Shahzad N *et al*<sup>13</sup> the mean gestational weeks was  $33.7 \pm 4.28$  weeks and more than 37 weeks was the most common range. Ngwenya S *et al*<sup>14</sup> the mean gestational weeks was  $33.4 \pm 4.4$  weeks in their study.

### GRAVIDA STATUS

**Present study:** Majority of the subjects were multi gravida in our study with gravidity range of 0 to 6. Laxmi RC *et al*<sup>6</sup> studied 21 cases of eclampsia of which 15 were primi and 6 were multigravida. Pillai SS *et al*<sup>16</sup> reported that primi were most common when compared to multi of which 60.90% were primigravida and 39.10% were

multigravida. Doley R *et al*<sup>17</sup> reported that primi were more common than multi of which 77.35% were primi. Raji C *et al*<sup>9</sup> reported that most common Gravida status was primigravida in 69.2% of their sample. Agarwal MP *et al*<sup>11</sup> reported that multigravida was more common when compared to primigravida. Khan A *et al*<sup>18</sup> reported that multigravida was more common than primigravida. Shahzad N *et al*<sup>13</sup> reported primigravida was more common in 63% of their sample. Qadir M *et al*<sup>8</sup> reported that primigravida was 62% and multi was 38% inferring primi was more common when compared to multi. Majority of the studies reported that eclampsia was more common in primigravida which is contradictory with our study findings.

### BOOKING STATUS

**Present study:** All the cases which we encountered were emergency cases means they were unbooked cases. Pillai SS *et al*<sup>16</sup> reported that booked cases were 78.18% cases and unbooked were 21.81% of cases. Kumari S *et al*<sup>7</sup> reported that majority of the eclampsia cases were unbooked when they were referred to their setup. About 63.4% were unbooked cases. Yogalaxmi SK *et al*<sup>8</sup> reported that majority of the cases were unbooked constituting 88.30% of their sample. Raji C *et al*<sup>9</sup> inferred that 68.49% were unbooked cases in their study. Shahzad N *et al*<sup>13</sup> reported that only 3% of their cases were booked. Ngwenya S *et al*<sup>14</sup> reported that 26.4% were unbooked cases in their study. Qadir M *et al*<sup>15</sup> reported that 78.7% were unbooked cases. It is important to note that those cases which were unbooked had a higher risk of developing eclampsia and its complications. This indirectly reflects the poor antenatal care will lead to many complications during pregnancy affecting the baby and mother.

### MODE OF DELIVERY

**Present study:** About 89.25% of the cases delivered by C section, 10.22% cases delivered vaginally and one case was induced abortion. A study conducted by Agarwal MP *et al*<sup>11</sup> reported that the eclampsia cases were delivered by C section in 48.83% of cases and about 51.16% it was vaginal route. Another study done by Khan A *et al*<sup>18</sup> reported that 65.36% delivered vaginally, 16.80% delivered by C section and 16.29% needed instrumental assistance for the delivery of the baby. Dagdeviren H *et al*<sup>12</sup> reported that 77.1% of their cases delivered by C section constituting the majority mode of delivery in their study. A study by Qadir M *et al*<sup>15</sup> reported that 52% cases delivered by C section, 16% cases delivered vaginally and 32% cases needed instrumental assistance. Another study conducted by Laxmi RC *et al*<sup>6</sup> reported that 42.86% cases delivered by C section, 33.33% delivered vaginally, 14.29% needed forceps and 10% cases needed vacuum for delivery. Pillai SS<sup>16</sup> and colleagues reported that

65.54% delivered by C section, 28.18% delivered vaginally, 4.54% delivered by instrumental means and 2.72% cases needed hysterotomy. Doley R<sup>17</sup> and workers reported that majority of the delivered by C section. Kumari S *et al*<sup>7</sup> reported that 64.5% of cases delivered vaginally and 35.56% cases delivered by C section. Another study conducted by Yogalaxmi SK *et al*<sup>8</sup> also reported that majority of their cases delivered vaginally. Raji C *et al*<sup>9</sup> reported that 61.65% cases delivered by C section, 31.51% delivered vaginally and rest delivered by other methods like instrumental, vacuum, forceps etc. Eclampsia is one the major indication for C section and this helps us in understanding the management of the disease per se.

### TIMING OF ECLAMPSIA

**Present study:** Majority of the subjects had antepartum eclampsia (98.89%) followed by 2 cases with post partum eclampsia and one case with both antepartum and post partum period. Patel PC<sup>19</sup> and workers reported that the eclampsia was antepartum in 80% of their cases, 17.1% were post partum and 2.9% were intra partum. Among the 13 cases reported by Pillai S *et al*<sup>16</sup>, 10 cases were antepartum and 2 cases were post partum. Doley R *et al*<sup>17</sup> reported 69.81% cases were antepartum, 20.75% were post partum and 9.43% were intra partum. Kumari S<sup>7</sup> and colleagues reported that 63.4% were antepartum, 20% were intrapartum and 5.5% were post partum in nature. Another study conducted by Yogalaxmi SK *et al*<sup>8</sup> also reported that antepartum cases were more common when compared to intra and post partum. Raji C *et al*<sup>9</sup> reported that 77.4% cases were antepartum, 2.7% cases were intra partum and 19.9% cases were post partum in nature. Dagdeviren H *et al*<sup>12</sup> reported that approximately 10% of their cases which include pre eclampsia and eclampsia developed antepartum eclampsia. A study by Mooij R *et al*<sup>20</sup> reported that 44% cases were antepartum, 42% cases were intrapartum and 15% cases were post partum. Qadir M *et al*<sup>15</sup> reported that 55.7% of their cases were antepartum, 18.5% cases were intra partum and 25.6% cases were post partum.

### MATERNAL COMPLICATIONS

**Present study:** About 2.15% had abruptio placenta, 0.54% had HELLP, 1.08% had acute renal failure, 0.54% had aspiration and 1.08% had intra cranial haemorrhage. Further, 6 patients needed ICU admission with ventilatory support. About 3.23% was the rate of maternal deaths in our study. Agarwal MP<sup>11</sup> and colleagues reported that 16.27% of their cases had acute renal failure, 6.97% had abruptio placenta and about 4.65% had history of Cerebrovascular accident. These were the most common maternal complications reported by them. Khan A *et al*<sup>18</sup> reported that Cerebrovascular accident was the most common cause of death in their study. One of the patient

developed aspiration and another patient had history of acute renal failure in their study. Shahzad N *et al*<sup>13</sup> reported that 10% of their cases succumbed to death. Among those, about 7 cases had pulmonary edema, 2 had DIC and 1 had acute renal failure. About 30% of their cases had significant maternal complications, among which 20% had acute renal failure, 2% had CVA and 11% had pulmonary edema. Ngwenya S *et al*<sup>14</sup> reported that 2.5% cases had abruptio placenta and 1.7% had acute renal failure in their study. Qadir M *et al*<sup>15</sup> reported 7% cases had acute renal failure, 6% cases had CVA, 4% had abruptio placenta and about 12% of their cases succumbed to death. Patel PC and workers reported that about 1.4% of their cases had acute renal failure, 1.4% had CVA and 1.4% had aspiration. Pillai SS *et al*<sup>16</sup> reported that 7.27% cases had renal dysfunction and 3.63% cases had abruptio placenta. Doley R *et al*<sup>17</sup> reported that 3.77% cases had acute renal failure, 5.66% cases had CVA and 1.89% needed ventilation support. About 3.77% had abruptio placenta and 13.21% developed pulmonary edema. Kumari S *et al* reported that 8.89% cases had abruptio placenta, 8.89% had acute renal failure, 7.78% had aspiration, 4.44% had CVA, 3.33% had respiratory failure and about 4.44% suffered death. Raji C *et al*<sup>9</sup> reported that 5.47% of their cases had acute respiratory distress syndrome, 4.1% had CVA, 2.05% suffered respiratory failure and 4.10% had abruptio placenta.

#### BIRTH WEIGHT

**Present study:** About 63.92% of the babies were low birth weight and 36.08% were normal birth weight. The mean birth weight of the babies was  $2.11 \pm 0.68$  kgs. The most common birth weight range reported by Patel PC *et al* was between 2000 to 2500gms constituting 37.1% of their cases. About 33.63% cases reported by Pillai SS *et al*<sup>16</sup> had low birth weight according the world health organisation guidelines. Kumari S *et al*<sup>7</sup> reported that about 50% of their cases were low birth weight. Among 43 cases studied by Yogalaxmi SK *et al*<sup>8</sup> about 29 cases were having low birth weight. Raji C *et al*<sup>9</sup> reported that 60% of their cases were low birth weight at delivery. Mooij R *et al*<sup>20</sup> reported that 49% of their cases had birth weight less than 2.5kg and 8% had birth weight less than 1.5kg. The mean birth weight reported was  $2.30 \pm 0.69$  kgs. About 23% of cases in a study conducted by Qadir M *et al*<sup>15</sup> reported that they had low birth weight. The mean birth weight reported by Shahzad N *et al*<sup>13</sup> was  $1.95 \pm 0.63$ kgs and 75% of their cases were low birth weight. Ngwenya S *et al*<sup>14</sup> reported that the mean birth weight in their study was  $1.90 \pm 0.78$ kgs.

#### FETAL COMPLICATIONS

**Present study:** Among the 191 births, 14.95% of them did not survive, 28.87% were pre mature, 63.92% were

low birth weight and 32.99% had to be admitted in NICU for treatment after delivery. Mooij R *et al*<sup>20</sup> reported that neonatal deaths were in 35% of cases. Qadir M *et al*<sup>15</sup> reported that 18.58% of the babies needed NICU admission, 33% had asphyxia and 23% had low birth weight. Shahzad N *et al*<sup>13</sup> reported that 63% cases needed NICU admission, 75% needed resuscitative measures and about 15% was the rate of neonatal deaths. Ngwenya S *et al*<sup>14</sup> reported that 54.5% needed NICU admission and 31.8% had either prematurity or low birth weight or respiratory distress syndrome. Agarwal MP *et al*<sup>11</sup> reported that 19% were premature babies, and 12% of their cases needed NICU admission. About 66% of cases studied by Dagdeverin H *et al*<sup>12</sup> reported that they were preterm and 10.6% needed NICU admission. Laxmi RC *et al*<sup>6</sup> reported the neonatal death rate of 28.58% in their study. Pillai SS *et al*<sup>16</sup> reported that 64.54% cases were premature, 39.09% needed NICU admission, 33.63% were low birth weight and 9.09% was the rate of neonatal mortality. Kumari S *et al*<sup>7</sup> reported a neonatal mortality of 10%, prematurity rate of 23.33% and aspiration in 12.22% cases.

#### CONCLUSION

The maximum incidence of eclampsia (51.61) was in the age group of 21 to 25. In our study eclampsia was found more common in multiparous women. About 89.25 percent of the cases had to deliver by Lower segment caesarean section. The most common indication was in these patients of eclampsia was foetal distress. Majority of subjects had antepartum eclampsia (98.39 percent). The commonest complication found in our study in the patients of eclampsia was abruption placenta which is 2.15 percent. Support. About 3.23 percent was the rate of maternal death in our study. About 63.92 percent of the babies were low birth weight. 28.87 percent of the babies were premature. The most common reason for the neonatal death was respiratory distress due to meconium aspiration.

#### REFERENCES

1. Sharma G, Mathai M, Dickson KE, Weeks A, Hofmeyr G, Lavender T, *et al*. Quality care during labour and birth: a multi-country analysis of health system bottlenecks and potential solutions. BMC Pregnancy Childbirth. 2015; 15 Suppl 2(Suppl 2):S2–S2.
2. Mustafa R, Ahmed S, Gupta A, Venuto RC. A comprehensive review of hypertension in pregnancy. J Pregnancy. 2012; 2012: 105918.
3. Anthony J, Damasceno A, Ojji D. Hypertensive disorders of pregnancy: what the physician needs to know. Cardiovasc J Afr. 2016; 27(2):104–10.
4. Uzan J, Carbonnel M, Piconne O, Asmar R, Ayoubi J-M. Pre-eclampsia: pathophysiology, diagnosis, and management. Vasc Health Risk Manag. 2011; 7: 467–74.

5. Gupte S, Wagh G. Preeclampsia-eclampsia. *J ObstetGynaecol India*. 2014; 64(1):4–13.
6. Lk RC, Shrestha S, Cr D. Managing Eclampsia in a Medical College. *NJOG*. 2014; 9(1):74–7.
7. Kumari S, Bhavani, Himabindu P, Padmapriya, Shrivya T. Clinical study of Eclampsia and outcome in a tertiary care centre. *IOSR J Dent Med Sci*. 2015; 14(11):106–9.
8. Yoga Lakshmi K, Suvarna R. The study of eclampsia as a cause of severe acute maternal morbidity. *Int J Reprod Contraception, Obstet Gynecol*. 2018; 7(10):4234–8.
9. Raji C, Poovathi M, Nithya D. Prospective study of fetomaternal outcome in eclampsia in a tertiary care hospital. *Int J Reprod Contraception, Obstet Gynecol*. 2016;5(12):4329–34.
10. Patel J, Desai N, Mehta S. Study of Fetomaternal Outcome in Cases of Preeclampsia. *Med Sci*. 2015; 4(7):503–10.
11. Agrawal M, Patil R, Pachpande V. Maternal and Fetal Outcome in Eclampsia . *Annu Int Med Dent Res*. 2017; 3(2):1–6.
12. Dağdeviren H, Çankaya A, Cengiz H, Tombul T, Kanawati A, SüzenÇaypınar S, *et al*. Maternal and Neonatal Outcomes of Women with Preeclampsia and Eclampsia at a Tertiary Care Center. *HasekiTıpBülteni*. 2015; 53: 143–6.
13. Shahzad N, Yaqoob U, Hanif A. Feto Maternal Outcome in Patients with Eclampsia at a Tertiary Care Hospital. *P J M H S*. 2013; 7(1):76–80.
14. Ngwenya S. Severe preeclampsia and eclampsia : incidence, complications, and perinatal outcomes at a low-resource setting, Mpilo Central Hospital. *Int J Womens Health*. 2017; 9: 353–7.
15. Qadir M. Eclampsia and its adverse maternal and perinatal outcomes: An analysis at tertiary care hospital. *JUMDC*. 2017; 8(4):14–8.
16. Pillai SS. Fetomaternal outcome in severe preeclampsia and eclampsia : a retrospective study in a tertiary care centre. *Int J Reprod Contraception, Obstet Gynecol*. 2017; 6(9):3937–41.
17. Doley R, Pegu B, Hazarika D. Clinical Study of Eclampsia in a Tertiary Care Hospital. *Indian J Sci Technol*. 2016; 9(29):1–5.
18. Khan A, Ghosh A, Banerjee PK, Mondal TK. Profile and Outcome of Eclampsia in a Rural Tertiary Hospital. *Int J Recent Trends Sci Technol*. 2014; 10(3):526–9.
19. Patel PC, Kathawadia KK, Saini HB. A study of fetomaternal outcome in eclampsia- A Case control study. *Natl J Med Res*. 2017; 7(1):5–8.
20. Mooij R, Lugumila J, Mwashambwa MY, Mwampagatwa IH, Dillen J Van. Characteristics and outcomes of patients with eclampsia and severe pre-eclampsia in a rural hospital in Western Tanzania : a retrospective medical record study. *BMC Pregnancy Childbirth*. 2015; 15: 1–7.

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