

Study of Maternal and Perinatal Outcome in Early Onset Severe Pre Eclampsia: A Hospital Based Observational Study

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Abstract: **Background:** Pre eclampsia is a multisystem pregnancy complication that is typically characterized by new onset hypertension and proteinuria after 20 weeks of gestation and affects both mother and fetus. Early onset severe pre eclampsia that develops before 34 weeks of gestation is associated with high maternal and perinatal mortality and morbidity rates and prolonged hospitalization of babies in the neonatal intensive care unit because of pre maturity. Management of early onset severe pre eclampsia requires complex decision making and involves experienced obstetrician and availability of neonatal intensive care units. **Aim and Objectives:** To study maternal and perinatal outcomes in early onset severe pre eclampsia. **Material and Methods:** Consecutive 52 cases of severe pre eclampsia were selected from pregnant women admitted in the maternity ward of Smt. Sucheta Kriplani Hospital based on inclusion and exclusion criteria and maternal and perinatal outcomes were measured. Inclusion criteria were pregnant women with singleton live pregnancy, with severe pre eclampsia, ≥ 24 to < 34 weeks of gestation and exclusion criteria were known cases of medical or other obstetric complications. **Result:** Out of 52 cases, 11 (21.1%) had antepartum eclampsia, 9 (17.3%) had abruptio, 4 (7.7%) cases went into ARF, 1 (1.9%) developed HELLP syndrome and 1 (1.9%) developed pulmonary oedema, 39 (75%) cases delivered vaginally and 13 (25%) cases had LSCS due to different indications. In the postpartum period out of 52 cases, one woman had atonic PPH and one had retained placenta. Among 52 cases, 37 (71.1%) had live birth outcomes and 15 (28.8%) cases had stillbirth. Out of 37 live babies, 30 (81.1%) shifted to NICU, only 7 babies (18.9%) were directly shifted to mother. Out of 37 live babies, 23 (62.1%) had RD at the time of birth, 27 (73.0%) had sepsis during course of hospital stay, out of which 13 (35.1%) had clinical sepsis, 10 (27.0%) were suspected cases and 4 (10.8%) were confirmed cases, 28 (75.7%) had hypoglycaemia, 10 (27.0%) had hypocalcaemia, 7 (18.9%) had jaundice and 4 (10.8%) had other complications, 10 babies (27.0%) expired after varying duration of hospital stay. **Conclusion:** Early onset severe pre eclampsia is associated with increased risk of adverse maternal outcome and poor perinatal outcome.

Keywords: Early onset severe pre eclampsia, maternal outcome, perinatal outcome

1. Introduction

Pre eclampsia is a multisystem disorder, affecting around 2-5 % of pregnancies. The prevalence may range as high as 10-18% in some developing countries.¹ Severe preeclampsia is one of the most serious problems facing obstetricians with substantially raised associated mortality and morbidity both of mother and baby.^{2,3} Early onset pre eclampsia is commonly associated with fetal growth restriction, abnormal uterine and umbilical artery doppler waveforms and adverse maternal and neonatal outcomes. In contrast, late onset preeclampsia is mostly associated with milder maternal disease and a lower rate of fetal involvement with usually favourable perinatal outcomes.¹ In patients with onset of pre eclampsia before 34 weeks there are higher incidences of maternal complications like eclampsia, abruptio placenta, intracranial haemorrhages, HELLP syndrome, acute renal failure, pulmonary edema and DIC with high perinatal morbidity and still births in contrast late onset pre eclampsia is mostly associated with milder maternal disease and a lower rate of fetal involvement with usually favourable perinatal outcomes.⁴ The only known cure for the disease is delivery. Some obstetricians advocate aggressive management to prevent development of serious maternal

complications such as eclampsia and renal failure. Others prefer expectant management delaying delivery in an attempt to reduce mortality and morbidity for the child associated with being born too early.⁷ Management of severe preeclampsia < 34 weeks gestation with immediate delivery leads to high neonatal mortality and morbidity rates and prolonged hospitalization in the neonatal ICU because of prematurity. Conversely, attempts to prolong pregnancy with expectant management may result in fetal death or asphyxia damage in utero and increased maternal morbidity.⁸

2. Methodology

This was an observational study conducted over two years in the Department of Obstetrics and Gynaecology in collaboration with the Department of Neonatology, LHMC. Women with singleton live pregnancy with severe pre eclampsia with > 24 to < 34 weeks of gestation were included in the study excluding pregnant women with a known case of diabetes mellitus or gestational diabetes mellitus, thyroid disorder, known case of asthma / liver / lung / heart disease, antenatally diagnosed gross congenital anomaly in baby or other medical and obstetrics

complications. Diagnosis of severe preeclampsia was made according to ACOG criteria.⁹

Consecutive 52 cases of severe pre eclampsia admitted in the maternity ward of Smt Sucheta Kriplani hospital were selected based on inclusion and exclusion criteria after taking informed consent. Estimated gestational age was confirmed by the last menstrual period or early trimester ultrasound. All women were subjected to detailed history and clinical examination. Maternal parameters like age, parity, gestational age and BMI were noted at the time of admission. Relevant biochemical and haematological investigations were done like complete hemogram, liver function test, kidney function test, blood sugar, serum electrolytes, glucose challenge test, HIV, HBsAg, VDRL, Urine albumin and sugar, 24 hour urine protein, USG KUB and fundus examination. The pregnancy was followed and managed according to the hospital protocol it included vital parameter charting, documenting signs and symptoms of impending eclampsia such as headache, visual disturbances, epigastric pain and weight gain, blood pressure monitoring was done 6 hourly, antihypertensives were added, urine albumin charting using dipstick once daily, 24 hour urinary protein estimation was done at admission and then as indicated, routine investigations including haemogram, liver function test and kidney function test was sent at the time of admission and then repeated weekly, unless indicated earlier. Fetal surveillance was done with daily fetal movement count, non stress test, modified biophysical scoring, doppler studies as indicated. Decision for termination was taken as per hospital protocol. All the patients were followed till the time of delivery, and early postpartum period and babies till the discharge from hospital. Any maternal and perinatal complications occurring during the hospital stay were noted and managed according to hospital protocol. Maternal

outcomes studied are eclampsia, abruptio placenta, HELLP syndrome, pulmonary oedema, acute renal failure, cerebrovascular accidents, DIC and other complications and perinatal outcomes included are birth outcome -Live, IUD / Stillbirth, if live weight, gestational age, AGA / SGA / LGA, Apgar score (at 1 min, 5 min and 10 min), NICU admission, HIE stage - I / II / III, Sepsis - clinical / suspect /confirmed, hypoglycaemia, hypocalcaemia, jaundice and other complications. Perinatal and neonatal outcomes were noted at the time of discharge of the baby.

Birth Weight According To Gestation – birth weight according to gestation were defined using the fanton growth chart. AGA (appropriate for gestational age) – birth weight between 10th- 90th percentile, SGA (small for gestational age) - birth weight between 3rd -10th percentile, very SGA (very small for gestational age) - birth weight < 3rd percentile, LGA (large for gestational age) - birth weight > 90th percentile for gestational age.

- **Still Birth** – As our study population consists of women with gestation of 24 to 34 weeks, all babies born with no signs of life at or after 24 weeks of gestation were included as stillbirth.
- **Suspect Sepsis** – Symptoms / signs of sepsis present but sepsis screen and culture negative

- **Clinical Sepsis** – Symptoms / signs of sepsis present, sepsis screen positive but culture negative
- **Confirmed Sepsis** – Symptoms / signs of sepsis present, sepsis screen positive with positive culture
- **Hypoglycemia** – WHO has defined hypoglycemia as blood glucose level less than 45 mg/dl.
- **Hypocalcemia** - is defined as total serum calcium of less than 7 mg/dL (1.75 mmol/L) or ionized calcium less than 4 mg/dL (1 mmol/L) in preterm infants.

Hypoxic Ischemic Encephalopathy (HIE) – is defined as, an abnormal neurobehavioral state consisting of decreased level of consciousness and usually other signs of brain stem and/or motor dysfunction, with objective data to support a hypoxic – ischemic mechanism as the underlying cause for the encephalopathy. It is divided into stage I / II / III according to Sarnat and Sarnat stages of hypoxic-ischemic encephalopathy.

Statistical Analysis

Data was collected and entered into excel sheets. The data was analyzed using the statistical package for socialsciences software version 15.0. Data was analysed and calculated in means, percentage and standard deviations.

3. Results

In our study out of 52 women 20 were primigravida and 32 were multigravida. The age of women included in the study ranges from 19 to 38 years with a mean age of 26.34 ± 4.93 years. Maximum number of women 24 (46.1%) were in < 25 years of age group.

Table 1: Distribution of cases according to period of gestation (weeks) at the time of admission

POG at admission (weeks)	Number of cases	%
≥ 24 - <27	3	5.80%
≥ 27 - <31	23	44.20%
≥ 31 - 34	26	50.00%
Total	52	100%
mean \pm SD	30.6 ± 2.4	

Out of 52, maximum number of cases 26 (50%) were in ≥ 31 – 34 weeks gestation at admission rest 23 (44.2%) were ≥ 27 – <31 weeks of gestation and 3 (5.8 %) cases were in ≥ 31 – 34 weeks of gestation with mean POG at admission was 30.6 ± 2.4 weeks.

Table 2: Antepartum maternal complications observed in study

Antepartum Maternal Complications	Number of cases	%
Eclampsia	11	21.10%
Abruption	9	17.30%
HELLP	1	1.90%
Pulm Edema	1	1.90%
ARF	4	7.70%
CVA	0	0.00%
DIC	0	0.00%
Others	0	0.00%

In our study maximum cases 11 (21.1%) had antepartum eclampsia. Out of 52 cases, 9 (17.3%) had abruption, 4 (7.7%) cases went into ARF, 1(1.9%) case developed

HELLP syndrome, 1 (1.9%) case had pulmonary edema. There were no cases of CVA or DIC.

Termination of pregnancy-

In our study out of 52 cases 39 (75%) cases delivered vaginally and 13 (25%) cases had LSCS due to different indications. Total 6 (11.5%) cases went into spontaneous labour, 37 (71.1%) cases were induced to terminate pregnancy due to different indications and 9 cases were taken for elective LSCS.

Table 3: Indication for induction

Indications for induction	number of cases	%
Uncontrolled BP	14	37.83%
Antepartum eclampsia	8	21.62%
IUD	4	10.81%
AEDF	3	8.10%
Impending eclampsia	3	8.10%
Abruption	3	8.10%
ARF	1	2.70%
PTPROM	1	2.70%
Total	37	100%

In our study out of 52 cases, 37 cases were induced. Maximum cases 14 (37.83%) were induced for uncontrolled BP. Out of 37 cases 8 (21.62%) were induced for antepartum eclampsia, 4 (10.81%) cases for IUD, 3 (8.10%) for AEDF, 3 (8.10 %) for impending eclampsia, 3 (8.10%) for abruption, 1 (2.70%) for ARF and 1 (2.70%) case was induced for PTPROM.

Indications for LSCS

Table 4: Indication for LSCS in cases

LSCS Indication	Number of patients	%
Breech	2	15.4
Fetal distress (FD)	2	15.4
Previous LSCS + Poor bishop score	2	15.4
Previous 2 LSCS	2	15.4
Failed induction	1	7.7
IUGR + raised S/D ratio	1	7.7
previous LSCS + REDF	1	7.7
AEDF	1	7.7
Contracted pelvis	1	7.7
Total	13	100

In our study total 13 women had LSCS, 2 in view of breech pregnancy, 2 in view of fetal distress, 2 in view of previous LSCS with poor bishop score, 2 in view of previous 2 LSCS, 1 for failed induction, 1 for IUGR with raised S/D ratio, 1 for previous LSCS with REDF, 1 for AEDF, 1 for contracted pelvis. Out of 13 LSCS 9 were elective LSCS and 4 were emergency LSCS. Out of 4 emergency LSCS 2 were for fetal distress, 1 for previous 2 LSCS in labour and 1 for failed induction.

Post partum complications

In the postpartum period out of 52 cases, one woman had atonic PPH, managed with uterotonic agents only and one had retained placenta for which manual removal of placenta was done in the operation theatre.

Birth outcome

Among 52 cases, 37 (71.1%) had live birth outcomes and 15 (28.8%) cases had stillbirth.

Table 5: Cause of IUD

Cause of IUD	Number of cases	%
Abruption	6	40.00%
IUGR + oligohydramnios	5	33.30%
IUGR + AEDF	1	6.70%
IUGR + REDF	1	6.70%
Extreme PT	1	6.70%
Extreme PT + MSL	1	6.70%
Total	15	100%

Among 52 cases, there were 15 cases of IUD. Maximum number were because of abruption in 6 (40.0%) cases, 5 (33.3%) cases due to IUGR with oligohydramnios, 1 (6.7%) due to IUGR with AEDF, 1 (6.7%) due to IUGR with REDF, 1 (6.7%) was extreme preterm, and 1 (6.7%) due to extreme preterm with MSL.

Table 6: Distribution of cases according to birth weight and gestational age

Gestational Age	Number of cases	%
AGA	21	40.40%
SGA	16	30.77%
Very SGA	15	28.80%
Total	52	100%

In our study among 52 cases, maximum 21 (40.4%) babies were AGA, 16 (30.77%) babies were SGA, 15 (28.8%) babies were very SGA. Out of 37 live births 11 (29.73%) were < 1 kg, 16 (43.24%) were 1-1.5 kg, 10 (27.02%) were 1.5-2.5 kg.

Table 7: Number of babies required NICU admission

NICU admission	Number of cases	%
Yes	30	81.1
No	7	18.9
Total	37	100%

In our study out of 37 live babies, 30 (81.1%) shifted to NICU, only 7 babies (18.9%) were directly shifted to mother.

Table 8: Neonatal complications observed

S.N.	Neonatal complications	number of cases (out of 37 live births)	%
1	RD	23	62.10%
2	Sepsis	27	73.00%
	I. Clinical	13	35.10%
	II. Suspected	10	27.00%
	III. Confirmed	4	10.80%
3	Hypoglycemia	28	75.70%
4	Hypocalcemia	10	27.00%
5	Jaundice	7	18.90%
6	HIE	0	0%
7	Neonatal death	10	27.00%
8	Others	4	10.80%

In our study out of 37 live babies, 23 babies (62.1%) had RD at the time of birth, 27 babies (73.0%) had sepsis during course of hospital stay, out of which 13 (35.1%) had clinical sepsis, 10 (27.0%) were suspected cases and 4 (10.8%) were

confirmed cases, 28 babies (75.7%) had hypoglycaemia, 10 babies (27.0%) had hypocalcaemia, 7 babies (18.9%) had jaundice, 4 (10.8%) babies had other complications, one had grade II germinal matrix bleeding and 3 babies had pulmonary bleeding. Most babies had more than one complication. Out of 37 live babies, 10 babies (27.0%) expired after varying duration of hospital stay.

Table 9: Distribution of cases according to duration of NICU stay

In NICU	Number of cases	% (out of live babies)
Upto 1 month	10	27.00%
>1 - 2 months	7	18.90%
>2 months	3	8.10%
Total	20	54.00%

In our study out of 37 live babies 10 (27%) babies were admitted to NICU for upto 1 month, 7 (18.9%) babies for 1-2 months and 3 (8.1%) babies for > 2 months. After a varying period of time 10 babies expired due to different causes, out of which 7 babies expired within 7 days of birth making early perinatal death rate 59.45%.

4. Discussion

This observational study was conducted in the Department of Obstetrics and Gynaecology, Lady Hardinge Medical College and Smt. Sucheta Kriplani hospital, New Delhi over two years. In our study 52 cases of severe pre eclampsia were enrolled as per inclusion and exclusion criteria. The aim of the study was to study maternal and perinatal outcomes in early onset severe pre eclampsia.

Severe pre eclampsia and maternal outcome - In our study 11 (21.1%) cases had antepartum eclampsia, 9 (71.3%) cases had abruptio, 4 (7.7%) cases went into ARF, 1 (1.9%) case had HELLP syndrome and 1 (1.9%) case had pulmonary oedema. Total 39 (75.0%) women delivered vaginally and 13 (25%) women were taken for LSCS. In the postpartum period one woman had atonic PPH managed with uterotonic agents only and one woman had retained placenta for which manual removal of placenta was done in the operation theatre. Annette E. Bombrys et al¹⁰ conducted a study on 46 patients (51 fetuses) of severe pre eclampsia at less than 27 weeks of gestation. There were 11 (24%) cases of HELLP syndrome, 6 (13 %) cases of abruptio placentae, 2 (4%) cases of pulmonary oedema, 2 (4%) cases of renal insufficiency, 1 (2%) case of eclampsia, and 21 (46%) cases had composite outcome that includes HELLP syndrome, pulmonary oedema, eclampsia and renal insufficiency. There were no cases of death or DIC.

A retrospective study was done by Annette E. Bombrys et al¹¹ on 66 women with severe pre eclampsia between 27 to 34 weeks of gestation. Total 53 (80 %) patients had caesarean section and vaginal delivery seen in 13 (20%) patients. Out of 66 cases HELLP developed in 5 (8%) cases, abruptio placentae seen in 7 (11%) cases, pulmonary oedema seen in 6 (9%) cases, renal insufficiency developed in 2 (3%) cases and 18 (27 %) cases had composite outcome that includes HELLP syndrome, pulmonary oedema, eclampsia and renal insufficiency.

A study was done by Baha M. Sibai¹² in which published randomized trials and observational studies regarding management of severe pre eclampsia occurring <34 weeks of gestation. They concluded that for women with severe preeclampsia before the limit of viability, expectant management has been associated with frequent maternal morbidity with minimal or no benefits to the newborn. Expectant management of a select group of women with severe preeclampsia occurring <34 weeks gestation may improve newborn outcomes but requires careful in-hospital maternal and fetal surveillance.

M. K. Swamy et al¹³ carried a observational study on maternal and perinatal outcome during expectant management of severe pre-eclampsia between 24 and 34 weeks of gestation, out of 94 patients 20 (21.27%) developed abruptio, 4 (4.26 %) developed HELLP syndrome, 2 (2.13 %) developed pulmonary oedema, 2 (2.13 %) had loss of vision, 2 (2.13 %) had eclampsia and 1 (1.06 %) case had DIC.

In a Cochrane meta analysis by Churchill D, Duley L et al⁷ of 4 randomised trials with a total of 425 women, comparing interventionist (aggressive) with expectant care (delayed delivery) with severe early onset preeclampsia before 34 weeks of pregnancy were studied. Only one study (95 women) reported on primary outcomes of relevance to the woman. In this study there were no reports of eclampsia or pulmonary oedema in either group. There were insufficient evidence about the effects on HELLP (haemolysis, elevated liver enzymes and low platelets) syndrome (one trial; 95 women; risk ratio (RR) 0.53; 95% confidence interval (CI) 0.05 to 5.68), Death, stroke and pulmonary oedema were not reported in any of the trials. Women allocated to the interventionist group were more likely to have a caesarean section (four trials; 425 women; RR 1.09, 95% CI 1.01 to 1.18), than those allocated an expectant policy. There were no statistically significant differences between the two management strategies for renal failure (two trials; 133 women; RR 0.30, 95%CI 0.01 to 6.97), or placental abruptio (two trials; 133 women; RR 0.80, 95% CI 0.26 to 2.40), Liver failure, cardiac arrest and the need for invasive monitoring for the woman were not reported in any of the trials.

In a multicentric randomized clinical trial by Vigil De Gracia et al¹⁴ involving 267 patients of severe preeclampsia between 28-33 weeks of gestation, 134 were randomized to the expectant management group and 133 to steroid with prompt delivery after 48 hours. In prompt delivery group abruptio placentae was seen in 2 (1.5%) cases, eclampsia in 1 (0.75%), HELLP syndrome developed in 21 (16%), pulmonary oedema was seen in 1 (0.76%), renal insufficiency developed in 1 (0.76%), oliguria was seen in 6 (4.58%) cases, there was no case of DIC. Total caesarean deliveries in the prompt management group were 118 (88.7%). In expectant management group abruptio placentae developed in 10 (7.6%) cases, eclampsia seen in 1 (0.76%), HELLP syndrome developed in 18 (13.5%), 2 (1.5%) cases developed pulmonary oedema, 3 (2.26%) developed renal insufficiency, 6 (4.51%) had oliguria and 2 (1.5%) cases went into DIC. In the expectant management group 124 (94.7%) babies delivered by caesarean section.

Severe pre eclampsia and fetal outcome—Out of 52 cases 15 (28.8%) had stillbirth and 37 (71.1%) had live birth. Out of 52 babies, 21 (40.4%) babies were AGA, 14 (26.9%) were SGA, 15 (28.8%) were very SGA and 2 (3.8%) were LGA. In our study out of 37 live babies 30 (81.1%) shifted to NICU. Only 7 babies (18.9%) directly shifted to mother. Out of 37 live babies 23 babies (62.1%) had RD at the time of birth, 27 babies (73.0%) had sepsis during course of hospital stay, out of which 13 (35.1%) had clinical sepsis, 10 (27.0%) were suspected cases and 4 (10.8%) were confirmed cases, 28 babies (75.7%) had hypoglycaemia, 10 babies (27.0%) had hypocalcaemia, 7 babies (18.9%) had jaundice and 4 (10.8%) babies had other complications, one had grade II germinal matrix bleeding and 3 had pulmonary bleeding. Most babies had more than one complication. Out of 37 live babies, 10 babies (27.0%) expired after varying duration of hospital stay. Out of 37 live babies, 10 (27%) babies admitted to NICU for up to 1 month, 7 (18.9%) babies for 1 – 2 months and 3 (8.1%) babies for > 2 months. After a varying period of time 10 babies expired due to different causes, out of which 7 babies expired within 7 days of birth making the early perinatal death rate 59.45%.

In a study by Annette E. Bombrys et al¹¹ on 66 cases (71 fetuses) of severe pre eclampsia between 27 to 34 weeks of gestation, there was one neonatal death in a 27 week foetus at 22 days of life from respiratory failure and necrotizing enterocolitis. The overall mean birthweight was 1519 ± 486 gms, 19 (27%) were below the 10th percentile and 6 (8%) were below the 5th percentile for gestational age at birth. Mild respiratory distress syndrome seen in 31/70 (44%) cases, bronchopulmonary dysplasia in 2 (3%) cases, and necrotizing enterocolitis seen in 5 (7%) cases. Out of 71 fetuses 64 (82%) were admitted to NICU. The overall mean neonatal hospital stay was 33 days.

In a study by M. K. Swamy, Kamal Patil et al¹³ carried on maternal and perinatal outcome during expectant management of severe pre-eclampsia between 24 and 34 weeks of gestation, Overall, the rate of IUGR was 40.42%, seventy-five (79.78%) babies were born alive. The total NICU admission required among 75 live born infants was 52 (69.33%). They stayed in the NICU for a median number of 12 days. There were a total of 3 cases of IUD, 10 cases of still birth and 5 cases of neonatal death.

In the study by Vigil De Gracia et al¹⁵ on 267 (3 cases were excluded from study due to various reasons) patients of severe preeclampsia between 28-33 weeks of gestation, in prompt delivery group out of 133 cases perinatal deaths were seen in 13 (9.4%) cases, respiratory death syndrome seen in 65 (52.4%) cases, 1 (0.81%) case had necrotizing enterocolitis, 4 (3.2%) had intraventricular haemorrhage, 31 (25%) babies developed neonatal sepsis, mean birth weight was 1543 grams, SGA babies were 13 (9.4%), mean Apgar score at 1 minute was 7.49, mean Apgar score at 5 minute was 8.60, 95 (69.3%) babies shifted to NICU and length of NICU admission was 13.8 days. In expectant management group out of 131 cases perinatal deaths were seen in 12 (8.7%) cases, 58 (46%) cases had respiratory death syndrome, necrotizing enterocolitis seen in 2 (1.6%) cases, 1 (0.79%) baby had intraventricular haemorrhage, neonatal sepsis developed in 31 (24.6%) cases, mean birth weight in

this group was 1659 grams, 30 (21.7%) babies were SGA, 102 (73.9%) babies were shifted to NICU, mean days of NICU stay was 13.4. Composite neonatal morbidity seen in 70 (56.4%) babies in prompt delivery group and in 70 (55.6%) babies in expectant management group, that includes respiratory distress syndrome, intraventricular haemorrhage grade III and IV, necrotizing enterocolitis and neonatal sepsis.

5. Conclusions

This study was conducted to find an association between early onset severe preeclampsia and maternal and perinatal outcome. We concluded that early onset severe pre eclampsia is associated with increased risk of adverse maternal and poor perinatal outcome

References

- [1] Moura SB, Lopes LM, Murthi P, Costa FS et al. Prevention of pre eclampsia. Journal of pregnancy 2012; Article ID 435090, doi:10.1155/2012/435090
- [2] Odendaal HJ, Pattison RC, Du Toit R. fetal and neonatal outcome in patients in severe pre eclampsia before 34 weeks. South African Medical Journal 1987;71:555-55
- [3] Sibai BM, Spinnato JA, Watson DL, Hill GA, Anderson GD. Pregnancy outcome in 303 cases with severe pre eclampsia. Obstetrics and Gynecology 1984;64:319-325
- [4] Gong YH, Jia J, Lu DH, Dai L et al. Outcome and risk factors of early onset severe pre eclampsia. Chinese medical journal 2012;125[14]:2623-
- [5] Duckitt K, Harrington D, risk factors for pre eclampsia at antenatal booking: systemic review of controlled studies: BMJ 2005;330(7491):565
- [6] Morgan T, Ward K. New insights into the genetics of pre eclampsia: Seminars in perinatology, Current and Evolving concepts in pre eclampsia 1992;23(1)14-23
- [7] Churchill D, Thornton JG, Duley L, Jones L et al, Interventionist versus expectant care for severe preeclampsia between 24-34 weeks gestation (Review). Cochrane Database of System Reviews 2013;(7) Art No: CD 003106, DOI: 10.1002/14651858.CD003106
- [8] Sibai B.M. Diagnosis, controversies and management of the syndrome of hemolysis, elevated liver enzymes and low platelet count. Obstet Gynecol 2004;103:981-991
- [9] Hypertension Bombrys AE, Barton JR, Habli M, Sibai BM. Expectant Management of Severe Preeclampsia at 27/7 to 33/7 Weeks' Gestation: Maternal and Perinatal Outcomes According to Gestational Age by Weeks in Pregnancy (Report of the ACOG Task Force On Hypertension in Pregnancy). Obstetrics and Gynecology 2013;122(5):1122-31
- [10] Bombrys AE, Barton JR, Habli M, Pinder L, Sibai BM et al. Expectant management of severe preeclampsia at less than 27 weeks gestation: maternal and perinatal outcomes according to gestational age by weeks at onset of expectant management. American Journal of Obstetrics and Gynecology; 2008;199:247-247

- [11] Bombrys AE, Barton JR, Habli M, Sibai BM. Expectant Management of Severe preeclampsia at 270/7 to 336/7 Weeks' Gestation: Maternal and Perinatal Outcomes
- [12] Sibai BM. Evaluation and management of severe preeclampsia before 34 weeks gestation. American Journal of Obstetrics and Gynecology 2011;205(3):191-198
- [13] Swamy MK, Patil K, Nageshu S. Maternal and perinatal outcome during expectant management of severe pre-eclampsia between 24 and 34 weeks of gestation. Journal of Obstetrics and Gynaecology of India 2012;62(4):413-418.
- [14] Gracia PV, Tejada OR, Minaca A, Tellez G, Chon V, Villar A. et al. Expectant management of severe preeclampsia remote from term: the MEXPRES Latin Study, a randomized, multicenter clinical trial; American Journal of Obstetrics and Gynecology 2013:209-42

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