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RESEARCH ARTICLE

"FETOMATERNAL OUTCOME IN EARLY ONSET SEVERE PRE ECLAMPSIA"

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Abstract

Introduction: Preeclampsia is a multisystem disorder occurring exclusively during pregnancy whose exact etiology is yet unknown. It occurs in approximately 5-7% of pregnancies. Early onset preeclampsia (<34 weeks' gestational age) occurs in less than 1% of pregnancies and is often associated with maternal morbidity as the riskof progressionto severe maternal disease is inversely related with gestational age at onset.

Material And Methods:100 pregnant women admitted to labor room in the department of OBG, Govt. medical college,Kota Rajasthan between 1 February 2021 – 31 January 2022who fulfilled the criteria (Gestational age ≥ 24 weeks &< 34 weeks , diastolic BP ≥ 110 mm Hg, with any features of severe pre eclampsia) were included in this study .

Results: In the present study, Out of 100 patients of early onset severe preeclampsia was more common in Primigravida 59(59%)in the age group of 21-30 years. Mean gestational age at diagnosis was 31weeks 3 days ± 2weeks 3 days. Most underwent termination of pregnancy after 32 weeks. Maternal indication was found to be the most common cause for termination. 31(31%) patients of the total experienced complication like imminent eclampsia, HELLP syndrome ,Acute renal failure and abruption placentae . 65 (65%) delivered by caesarean section. Mean birthweight was 1.59 kg ± 0.5kgand neonatal complication rate was 71(71%).

Conclusion: Early onset severe preeclampsia is associated with significant maternal and fetal complications. Decision regarding termination of pregnancy has to be taken based on both maternal and fetal factors.

Introduction:-

Preeclampsia is a multisystem disorder involving placenta, kidney, liver, blood, cardiovascular and neurovascular system, occurring exclusively during pregnancy whose etiology is not known.

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Preeclampsia (gestational proteinuric hypertension) complicates 5-6% of all pregnancies.[1] Preeclampsia is a pregnancy specific disorder commonly defined as de novo hypertension and proteinuria after 20 weeks gestational age. Early onset preeclampsia (<34 weeks' gestational age) occurs in less than 1% of pregnancies. It is, however often associated with maternal morbidity as the risk of progression to severe maternal disease is inversely related with gestational age at onset[2]. It is the second most common cause of maternal death in the United States (after thromboembolic disease) and accounts for 12-18% of all pregnancy-related maternal deaths (approximately 70 maternal deaths per year in the United States and an estimated 50,000 maternal deaths per year worldwide).[3] It is also associated with a high perinatal mortality and morbidity rate, which is primarily due to iatrogenic prematurity.

Various theories have been proposed in the causation of pre eclampsia.
- Abnormalities in the trophoblastic invasion.
- Genetic predisposition
- Role of vasoactive agents
- Immunological theory
- Oxidative stress and inflammatory changes
- Endothelial factor.

So, termination of pregnancy is needed if there is fetal distress or in case of multi organ dysfunction when the gestation age reaches 34 weeks. Accelerated fetal lung maturation does not occur in preeclampsia[4] however expectant management to prolong pregnancy can be deleterious to the mother [5].Although definitive treatment of preeclampsia, especially severe preeclampsia and eclampsia, is delivery of the fetus, expectant management in women remote from term has been tried for better foetal outcome without compromising maternal condition.

Material And Methods:-

The present study was donein the department of OBG, Govt. medical college, Kota Rajasthan from 1 Feb 2021 to 31 Jan 2022. 100 patients with pregnancies complicated by EARLY ONSET SEVERE PREECLAMPSIA were studied.

Inclusion Criteria:

1. Gestational age >=24weeks and < 34 weeks
2. Diastolic BP >= 110 mmHg
3. Proteinuria >= 2+ (In recent classification they have removed the dependance of the diagnosis of pre eclampsia upon proteinuria) with any of the following :-

(a) Persistent headache
(b) Blurred vision
(c) Eclampsia
(d) Elevated liver enzymes
(e) Low Platelets
(f) Abruptio Placenta
(g) Oligohydomnios
(h) FGR

Exclusion Criteria:

1. Gestational age < 24weeks and > 34 weeks
2. Preexisting chronic renal and hepatic disease.
3. Idiopathic hemolytic anaemia
4. Idiopathic thrombocytopenic purpura
5. Epilepsy

Patient's detailed history, symptoms and signs of severe preeclampsia, imminent eclampsia were noted.General and Obstetric examination was carried out.

Obstetric ultrasound with fetal doppler were performed in patients on expectant management. In case of any abnormalities like Doppler changes, oligohydromnios and FGR then expectant management was discontinued and planned for termination of pregnancy.Details regarding treatment (Antihypertensives, MgSo4, steroids) , induction of labor, mode of delivery ,Intraoperative, postpartum complications were noted.

Collected datas were tabulated and statistical analysis performed using SPSS statistical version 20.0.

Result:-

Out of 100 patients admitted during the study period, Most of the women were in the age group 21-30 yrs 82 (82%). Mean age group was 26 yrs± 4yrs.

Most of the patients were primigravida (59%) and rest were multigravida (41%). Gestational age at diagnosis was 32- 34 weeks in 47 (47%),28 – 32 weeks in 40 (40%) and 24 – 28 weeks in 13 (13%) of the study subjects. Mean gestational age at diagnosis was 31 weeks 3 days ± 2weeks 3 days.

Out of 100 patients, 67 (67%) women received MgSO4 out of which 3 developed seizures (1 of them had Postpartum eclampsia). 33 (33%) women did not receive MgSO4, out of which 9 developed seizure. All women in the study group received oral antihypertensive (Tab Nifedifine, Tab Nifedifine with Tab labetalol). 29 women (29%) required parenteral antihypertensive (Inj Labetalol or Inj. Nitroglycerine) for control of blood pressure. Out of 100 women, 45 (45%) women were on oral antihypertensive before admission.

Out of 100 patients,48 (48%) needed induction of labour. Out of 48 patients who were induced , 35 (35%) delivered vaginally and 13 (13%)underwent caesarean section . 52 (52%) patients were not induced and underwent direct caesarean section. Overall , total number of patients who underwent LSCS were 65 (65%) and 35 (35%) delivered vaginally.

Termination of pregnancy was done most commonly for maternal indication.

31 (31%) women experienced complications. Eclampsia and Abruption were highest accounting to 10 (10%) and 10 (10%) respectively.

Out of the Total 100 babies, 71(71%) babies had complications. 15 were IUFDs, majority were in women who were referred as IUFDs. Cause of IUFD was abruption in majority of cases. 82 babies were born alive . All were preterm. Major cause for neonatal morbidity and mortality were prematurity and Respiratory distress syndrome. Neonatal death were 14.

Low birth weight, defined as 1.5 – 2.5 kg was seen in 68 (68%) cases very low birth weight 1 – 1.5 kg was seen in 17 (17%) cases. Extreme low birth weight < 1 Kg was seen in 15 (15%) cases. Mean birth weight was 1.59Kg ± 0.5 FGR was seen in 14 babies (14%).

In majority of the patients BP control was achieved within a week. Only 3 patients were required postnatal BP control within 2 weeks.

Overall fetal morbidity was more than maternal morbidity.

Distribution of patients according to Gestational age at the time of diagnosis

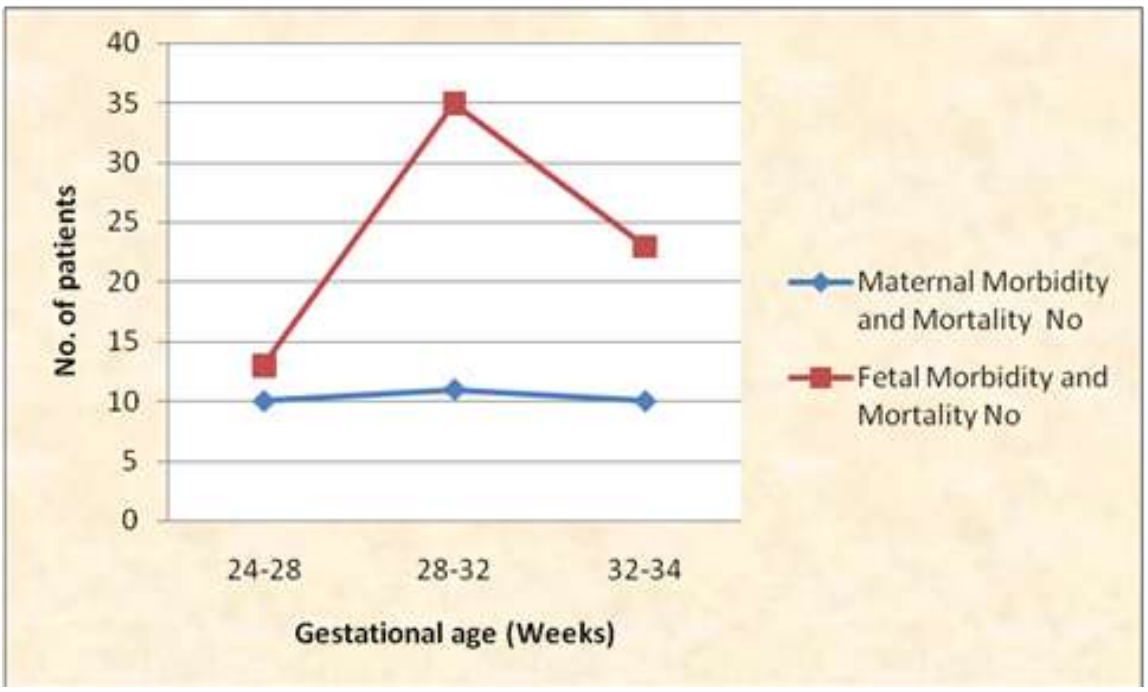
Gestational Age (Weeks)	No. of Patients	Percentage
24-28	**13**	**13**
28-32	**40**	**40**
32-34	**47**	**47**
Total	100	100

Distribution of cases according to Maternal Outcome

Maternal Outcome	No. of Patients	Percentage
Antepartum eclampsia	10	10
Postpartum eclampsia	2	2
Abruption	10	10
Wound Infection	4	4
Maternal mortality	0	0
HELLP	2	2
DIC	1	1
ARF	1	1
Atonic PPH	1	1
Total	31	31

Distribution of cases according to Fetal Outcome

Fetal Outcome	No. of Patients	Percentage
IUFD	15	21.12
Neonatal Death	14	19.71
Still brith	3	4.22
FGR	14	19.71
RDS	13	18.3
HIE	1	1.4
RDS + HIE	7	9.85
Septicemia	4	5.63
Total	71	100



Discussion:-

Preeclampsia affects both mother and neonate. It is one of the leading cause of maternal and fetal morbidity and mortality. Preeclampsia is common in first pregnancy. More than half the women in this study were Nulliparous, 59(59%). Brown MA and Buddle ML said preeclampsia is predominant in nulliparous.

There was a positive correlation between gestational age at diagnosis and the fetal outcome.Earlier the onset of preeclampsia greater is the fetal complications, 95.2% at 24 to 28 weeks compared to 43.4% after 32weeks. In the study by D.R.Hall and Brown MA & Buddle ML, mean gestational age at diagnosis was 30 weeks 27 days respectively. In our study mean gestational age of diagnosis was 33 weeks 3 days.

Magnesium sulphate reduces the risk of maternal mortality and the risk of seizures.[10] Magnesium sulphate was given to 67% of severe preeclampsia in our study which is low compared to other studies. In a study by Lee WO' Connell CM and Baskett 97% of the patients received magnesium sulphate[11].

In this study all patients received oral hypertensives either nifedipine or labetolol and nifedipine. 29 (29%) patients required parenteral antihypertensives in addition to oral antihypertensive. In all patients who required parenteral antihypertensive magnesium sulphate was given and seizures did not occur in most of the cases.

Though preeclampsia is one of the risk factor for prematurity, the cause of prematurity in most of the cases is iatrogenic either induction of labour or caesarean section to prevent morbidity and mortality in mother and fetus.

Almost 65% of the women in this study were delivered by caesarean section.

This rate is higher than that reported by Mashiloane and Moodley but similar to that of Hall et al where 81.5% delivered by means of caesarean section.

Low birth weight, defined as 1.5-2.5kg was seen in 68 (68%) cases very low birth weight 1-1.5Kg was seen in 17 (17%) extreme low birth weight <1kg was seen in 15 (15%) cases. Mean birth weight was 1.43kg.The mean birth weight was 1.59 kg in the study by D R Hall et al, 1.62 kg in the study by Sibai et al.

Ultimate goal in the management of severe preeclampsia must first be the safety of the mother and second the delivery of a live infant who will not require prolonged neonatal care.

In our study maternal morbidity and mortality was seen in 31%. Eclampsia and abruption were highest accounting to 10(10%) and 10(10%) respectively. Other complications were HELLP, DIC, ARF.

Witlin et al[12] reported that neonatal outcome in early onset severe preeclampsia was directly correlating with increasing birth weight and Respiratory distress syndrome reduced with increasing gestational age.

In our study majority babies required neonatal ICU. Major neonatal complications were Hyaline membrane disease, HIE, FGR, Septicemia, and neonatal death.

In majority of the patients BP control was achieved within a week. only 3 patients were required postnatal BP control within 2 weeks.

Conclusion:-

Early onset severe preeclampsia is defined as occurring before 34 weeks and it featured by more maternal complications and a worse perinatal prognosis compared with that defined as occurring after 34 weeks

Early booking is essential for better maternal and fetal outcome.Decision regarding termination of pregnancy has to be taken based on both maternal and fetal factors. In case of severe uncontrolled blood pressure with complications, termination should be done irrespective of fetal maturity. Good NICU improves the fetal prognosis.

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