## RESEARCH ARTICLE

# A Study on Incidence of Pre-Eclampsia and its Neonatal Outcome

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## ABSTRACT

Pre-eclampsia is one of the leading cause of mortality and morbidity to both mother and neonates worldwide. WHO estimates the incidence (number of new cases) of pre-eclampsia to be seven times higher in developing countries (2.8% of live births) than in developed countries (0.4%). It is defined as the new onset of hypertension in a previously normotensive women and the presence of protienuria. To study incidence of pre eclampsia and its neonatal outcome in a tertiary care hospital, a prospective observational study was conducted over a period of 6 months in inpatients of Obstetrics and Gynaecology Department at SVS medical college and hospital, Mahabubnagar. The data regarding demographic details, present complaints, gestational age, obstetrics history, diagnosis, were collected and evaluated. A total of 628 cases of pregnant women were observed among them 52 cases were found to be Pre eclamptic patients. The incidence was found to be 8.28%. Neonatal data showed low APGAR score (23.07%), LBW (67.30%), IUD (3.84%), IUGR (3.84%) and neonatal death (9.61%). The study concluded that incidence of preeclampsia was high. The most common risk factors associated were nulliparity, consanguineous marriage and women with high body mass index and adverse neonatal outcome was seen. So there is need for patient education and public health awareness and improvment of socioeconomic circumstances which can help maternal and neonatal prognosis..

## INTRODUCTION

Hypertensive disorders of pregnancy represents a group of conditions associated with elevated blood pressure along with proteins in urine. In some cases if PE is not controlled then it shows complication like seizures. The most serious affects for the mother and foetus are results of pre-eclampsia and eclampsia[1]. The incidence of pre-eclampsia after 24th week of gestational period in India is around 7.6% of which 3.3% is severe pre-eclampsia[2]. Pre-eclampsia sometimes develops without any symptoms. But most commonly increase in blood pressure is sudden onset, Excess proteins in urine (Proteinuria),Severe Headache, Changes in vision, Upper abdominal pain, Nausea or vomiting, Thrombocytopenia, Impaired liver function, Shortness of breath, Severe oedema (mainly of face, hand and (or) feet)[3].

Risk factors include: Multiple pregnancy, *In vitro* fertilization treatment, preexisting chronic hypertension and diabetes mellitus, Previous adverse obstetric History- perinatal death, Fatal

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growth restriction, abrutio placenta and other factors like: Extremes of maternal age (35 yrs or more),Obesity, Family history of Pre-eclampsia[4].

Neonatal complications include: Intra uterine growth restriction, Intra uterine death Prematurity, Low birth weight[5].

## MATERIAL AND METHODS

A prospective observational study was conducted over a period of 6 months in inpatients of Obstetrics and Gynaecology Department at SVS medical college and hospital, Mahabubnagar. The data regarding demographic details, present complaints, gestational age, obstetrics history, diagnosis, were collected and evaluated.

## RESULTS

A total of 628 cases were observed and among them 52 cases were found to be pre eclamptic patients. The incidence was found to be 8.28%. The condition was divided into mild and severe depending upon the severity.

Table 5.1: Type of Pre Eclampsia

| Type of Pre Eclampsia | Percentage (%) |
|---|---|
| Mild | 35% |
| Severe | 65% |

From the data it is shown that mild cases constitute for (35%) and severe cases for (65%).

Table 5.2: Basic Demographic Details

| Variables | Range | Percentage (%) |
|---|---|---|
| **Age (yrs)** | <20 | 63.46% |
| | 21-25 | 23.07% |
| | 26-30 | 11.53% |
| | >30 | 1.92% |
| **Education level** | Illiterate | 44.23% |
| | Primary | 34.61% |
| | Secondary | 17.30% |
| | Graduate | 3.84% |
| **Gestational weeks** | <24 | 1.92% |
| | 25-30 | 11.53% |
| | 31-36 | 75.0% |
| | >36 | 11.53% |

| Gravidity | Primi Gravida | 61.53% |
|---|---|---|
| | Multi Gravida | 38.46% |

Most of the patients were under the age group of >20yrs i.e. about 63.46% and education level of majority of patients were either illiterate or primary level. Around 61.53% were of primi gravida.

Table 5.3: Clinical Manifestations of Pre Eclamptic Patients

| Symptoms | Percentage (%) | |
|---|---|---|
| Headache | 32.69% | |
| Blurred Vision | 25.0% | |
| Shortness Of Breath | 5.76% | |
| Severe Edema | 90.38% | |
| Proteinuria | + | 42.30% |
| | ++ | 26.92% |
| | +++ | 25.0% |
| | ++++ | 5.76% |

Table 5.4: Maternal Complications Associated With Pre Eclampsia

| Maternal complications | Percentage (%) |
|---|---|
| Oligohydramnios | 3.84% |
| Eclampsia | 40.38% |
| HELLP Syndrome | 1.92% |
| Elevated LFT Levels | 23.07% |
| Maternal Death | 0% |

The complication which is highest seen is eclampsia is (40.38%), followed by elevated LFT levels (23.07%), oligohydramnios (3.84%), HELLP syndrome (1.92%) and 0% maternal death.

Table 5.5: Relation of Mode of Delivery with Pre Eclampsia

| Mode of delivery | Percentage (%) |
|---|---|
| Normal Vaginal Delivery | 28.84% |
| C- Section | 71.15% |

Table 5.6: Risk Factors Associated With Pre Eclampsia

| Risk factor | | Percentage (%) |
|---|---|---|
| Nulliparity | | 61.53% |
| Chronic Hypertension | | 13.46% |
| Diabetes Mellitus | | 3.84% |
| High BMI | | 25.0% |
| Hypothyroidism | | 1.92% |
| Interval Between Pregnancies | <3yrs | 25.0% |
| | 3-5yrs | 1.92% |
| | >5yrs | 9.61% |
| Multiple Pregnancies | | 1.92% |
| Consanguineous Marriage | | 13.46% |

Table 5.7: Neonatal Outcome Related To Pre Eclampsia

| Neonatal outcome | Percentage (%) |
|---|---|
| Low APGAR Score (5 Min) | 23.07% |
| IUD | 3.84% |
| LBW | 67.30% |
| IUGR | 3.84% |
| Neonatal Death | 9.61% |

Around 67.30% neonates were born with low birth weight.

## DISCUSSION

In the present 6 months study it has been observed that incidence in mahabubnagar in a tertiary care hospital is 8.28%, in India it is said to be 8-10% of the pregnancies and according to previous studies conducted in Pune (Maharashtra) the incidence was found to be 4.4%[6] and in Pakistan it was found to be 7.02%[7].

Age has an important influence on incidence of PE. In previous studies the highest incidence is seen in age group of 18-22[8]. In current study, it is seen in age group < 20yrs.

The majority of patients were illiterate (44.23%), and studies conducted in Gujarat the majority were illiterate (56.7%)[1], it can be concluded that it is seen mostly in illiterate, may be due to low socio economic status of women.

Pre eclampsia generally occurred in 3rd trimester of pregnancy especially between 31-36 weeks of gestation (75%). According to previous data it is seen that 86% in 37-40 weeks of gestation[9] and 43.2% in 31-36 weeks of gestation[6].

Pre eclampsia is primarily regarded as a disease of first pregnancy. Current Study showed primigravidae (61.53%) were affected and nulliparity was associated with a significantly increased risk of Pre eclampsia. It is believed to be related to maternal first exposure to trophoblast, which are of foetal origin. Previous study reveals that with increasing parity incidence of pre eclampsia reduces and shows 48% cases were primi gravidae[10].

Delivery is the ultimate cure of pre eclampsia, in our study almost 71.15% were delivered through C- section and according to previous studies 87.0% were delivered through C- section[6].

Severe oedema was most common antecedent symptom in (90.38%) followed by head ache (32.69%), and blurred vision (25.0%) but according to other studies the symptoms are oedema (22.7%), severe headache (25%), epigastric pain (8%), blurring vision (2%)[6], headache (44%), epigastric pain (20%), pulmonary oedema (8%) and blurring of vision(8%)[11].

In previous study, it has been seen that maternal complications are abruptio placentae (11%), renal dysfunction (9%), HELLP Syndrome (2%)[11]. In our study eclampsia is seen in 40.38%, elevated LFT levels (23.07%), HELLP syndrome (1.92%) and oligohydramnios (3.84%).

In the current study maternal mortality rate was found to be 0% but in other studies it is (1%)[10]. The Neonatal death rate was found to be 9.61%

but a study conducted by[11] the rate was 34.69% and[7] it was 28.76%. In current study it shows low birth weight (LBW) incidence of 67.30%. Low APGAR score incidence is 23.07%. The risk factors mainly associated are high BMI (25%), Interval >3yrs between pregnancies (25%), chronic hypertension (13.46%) and consanguineous marriage (13.46%).

## CONCLUSION

Pre eclampsia continues to present as one of the leading causes of maternal morbidity. The incidence of pre eclampsia in pregnancy is high (8.28%) more in primi gravidas, they account for significant maternal and foetal complications as well as neonatal morbidities. Mode of delivery is influenced by severity of pre eclampsia. Significant risk factors found in the study are nulliparity (61.53%), high body mass index (25%), chronic hypertension (13.46%) and early pregnancy. The various maternal complications seen in study are eclampsia (40.38%), elevated LFT levels (23.07%), oligohydramnios (3.84%), HELLP syndrome (1.92%). It has a great implication on adverse neonatal outcome; the complications seen are low APGAR score (23.07%), low birth weight (67.30%), intra uterine death (3.84%), Intra uterine growth restriction (IUGR) (3.84%) and neonatal death (9.61%).

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