

**Review Article**

**PREECLAMPSIA SCENARIO IN INDIA**

**Ruchika Garg, Vishy Agarwal**

**ABSTRACT**

In recent years, incidence of hypertension in pregnancy is increasing manifold. Termed as pregnancy induced hypertension (PIH), it is associated with generalized edema and proteinuria which is known as preeclampsia. It is one of the major reasons of maternal mortality and morbidity in India. Early diagnosis, proper management plays a vital role as this disease causes considerable morbidity and mortality in both the mother and fetus. The objective of our review article is to elaborate on treatment protocols and limitation on Indian scenario and give recent insights on the criteria’s used for taking clinical decisions at different levels of pregnancy care for patients with PIH & preeclampsia. Our article also highlights the newer diagnostic procedures and treatment modalities for the management of the above conditions.

**Key words:** PIH, Hypertension, Preeclampsia, Risk factors

**Introduction**

Preeclampsia was formerly defined as a multisystemic disorder characterized by new onset of hypertension (i.e. systolic blood pressure (SBP)  $\geq$  140 mmHg and/or diastolic blood pressure (DBP)  $\geq$  woman. Recently, the American College of Obstetricians and Gynecologists (2013) has stated that proteinuria is no longer required for the diagnosis of preeclampsia. Preeclampsia was formerly defined as a multisystemic disorder characterized by new onset of hypertension (i.e. systolic blood pressure (SBP)  $\geq$  140 mmHg and/or diastolic blood pressure (DBP)  $\geq$  90 mmHg) and proteinuria

Preeclampsia occurs in 5-8% of pregnancies worldwide and is the second leading cause of direct maternal and fetal death. The prevalence of preeclampsia varies in different population and different ethnic groups [1].

In India the incidence of preeclampsia is reported to be 8 - 10% of the pregnancies [2].

Prevalence of hypertensive disorder in pregnancy in different study

STUDY	PREVALENCE OF HTN DISORDER
Bharti Menta et al (2011-2012)[3]	6.9%
Sachdeva et al (2011)[4]	15%
Nadkarni J et al (2001)[5]	7.49%
Mohan BS et al (2004)[6]	15.5%
Prakash J et al (2006)[7]	5.38%
Bangal VB et al (2011)[8]	8.96%

Manjusha Sajith et al [9] had shown that the prevalence of preeclampsia is 5.4% in the study population and the prevalence of eclampsia is found to be 0.6% of pregnancies. In the study by Sutapa et al it was shown that the prevalence of preeclampsia was lowest in Haryana (33.3%) and highest in Tripura (87.5%). This potential difference can be explained on the basis that there was a very high rate of

smoking and poor access to health care facilities in the rural areas as in Haryana. The other possible explanation of this difference is the climacteric difference and alteration in the vitamin D regulated calcium metabolism due to difference in sunlight exposure [10,11]

Maternal mortality has decreased significantly across India with an estimated maternal mortality ratio (MMR) of 174 per 100,000 livebirths [139–217] in 2015, and an annual rate of reduction of 4.6% between 2000 and 2015. The major causes of maternal death and morbidity globally are hemorrhage, the hypertensive disorders of pregnancy, and sepsis [13].

The factors responsible for the maternal mortality due to preeclampsia in India are

1 Lack of and/or poor prenatal care

- delay in early diagnosis
- progression to severe eclampsia
- delay in treatment

2 Lack of access to hospital care

- Lack of access to transportation to clinic
- Lack of transport from clinic to hospital
- Lack of transport from hospital to tertiary centre

3 Lack of well-trained staff and personnel

- Lack of proper resources

Medicines

- Equipment's

Intensive care unit

The complications arise due to severe preeclampsia are the disseminated intravascular coagulation, renal failure, pulmonary oedema, intracranial haemorrhage.

In 2010 the maternal mortality from eclampsia ranges from 2.2% to 9% [15]

In developing countries, the factors responsible for conversion to eclampsia are

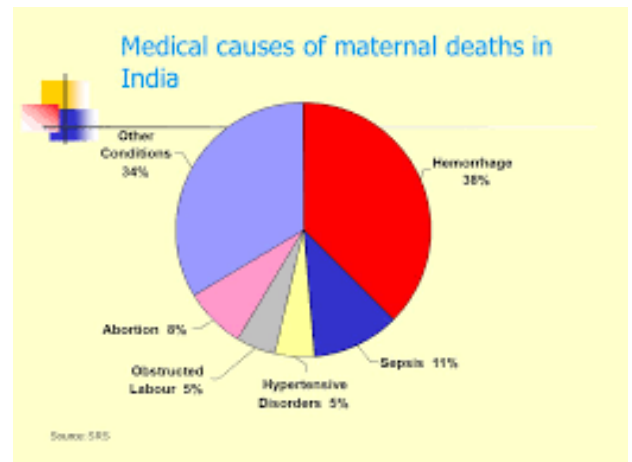
**NULLIPARITY** - In all the studies nulliparous women predominated (79%) followed by second gravid (12.3%)

**AGE** - About 93.9% of women were from the age groups up to 19 years but maximum number of women were in the age group of 20 - 25 years because of the fact that maximum number of women conceive in this age group

**EDUCATIONAL STATUS**- About majority of these eclamptic women are uneducated and hence illiteracy was the major risk factor for developing eclampsia.

**ANTENATAL CARE** - Majority of women in India do not receive antenatal care which is responsible for developing eclampsia

According to SRS 2010 - 2012 MMR of India is 178. Maternal Mortality ratio in India had shown an appreciable decline from 398/100000 live birth in the year 2001 - 2003 to 254/100000 live birth in the year 2004 - 2006 and 178 as per 2013. [16,17]



Ruchika Garg et al [18] had studied the role of low dose magnesium sulphate in 78 cases of eclampsia which is one of the leading causes of maternal mortality and it was found that eclamptic convulsions were controlled in 94.87% of the cases with the low dose regimen.

In the Indian public health system, primary health centres (PHC) serve as the first point of care. Each PHC is staffed by one doctor and three to five staff nurses, and each sub-centre is staffed by one auxiliary nurse midwife (ANM) [19,20]. ANMs provide health services including screening, management, and referral for pregnancy and new-born complications. Since 2005, the National Rural Health Mission (NRHM) has introduced innovative strategies to accelerate progress towards improving health outcomes. These strategies include mobilization efforts by frontline workers, namely the accredited social health activists (ASHA), and numerous initiatives to increase institutional deliveries [21].

Staff nurses, ANMs and ASHAs explained that to identify pre-eclampsia, blood pressure must be measured; this is the only method of identification as symptoms cannot be used reliably to diagnose. In addition to hypertension, ANMs claimed that dizziness, swelling, visual disturbances, sweating and restlessness, were danger signs associated with pre-eclampsia.

They had also been given the knowledge regarding the signs of eclampsia, such as jerky movements, shaking of hands and legs, frothing from the mouth and rolling of the eyes. Staff nurses and ANMs were suggested regarding the regular blood pressure measurements in pregnancy. If hypertension was detected they advised as follows: rest, decrease salt intake, iron supplementation, and tetanus vaccination and the regular follow up.

In addition to these recommendations, staff nurses claimed to provide antihypertensive medication and, in some cases, MgSO<sub>4</sub>. ASHAs also stressed the importance of medical adherence and the avoidance of home treatment to the preclamptic women

ANMs stated that they administered antihypertensive agents when indicated; by far the most common antihypertensive in use was nifedipine. It is important for skilled birth attendants to know about antihypertensive

drugs, their indications, contraindications, dosage and limitations for their use.

National guidelines authorize ANMs and nurses to administer MgSO<sub>4</sub> to women suffering from eclampsia; however, the majority of ANMs claimed not to have administered MgSO<sub>4</sub> themselves but they are quite familiar to the other anticonvulsive such as diazepam (calmpose), and phenobarbitone.

#### DISCUSSION:

It has also been found that the identification of the preeclampsia depends mainly on the frequency of the antenatal care visit<sup>[22]</sup>. Due to the lack of the facilities of the antenatal care many patients of the preeclampsia are missed. In India there is marked difference between the urban and rural areas in accessing the antenatal care. There is only 62.4% of repeated antenatal visit of women in urban areas compared to only 27.7% in rural areas as a result of which many cases of preeclampsia are missed<sup>[23]</sup>.

The CLIP (Community level intervention for preeclampsia) trials<sup>[24]</sup> conducted in India aims to reduce maternal and neonatal mortality and morbidity by the use of an evidence-based package of care for the community-level identification and emergency management of women at risk of developing eclampsia or pre-eclampsia.

The CLIP Pilot Trial in India was officially launched on 8 February 2014 and was successfully completed in October 2014, with an overall acceptance rate for referral of 85% with a combined urgent (<4 hr) and non-urgent (<24 hr) referrals and the primary indication for referrals has been severe hypertension<sup>[25]</sup>.

Jariwal<sup>[26]</sup> had designed a prevention protocol with new concept to describe the etiology and cause of preeclampsia in which 800 cases who have developed preeclampsia during any phase of pregnancy were selected and aim is to reduce the severity of disease process by early prediction and treatment. The results of the study had shown that Jariwala's therapy is effective in mild to moderate cases of preeclampsia.

To this end, the Indian central government and other state governments should:

- Require that all healthcare providers, public and private, "notify" (formally report) all pregnancy-related deaths.
- Institutionalize under the NRHM a system of maternal deaths investigations. Investigations should identify systemic shortcomings and findings should be integrated into the planning and development of district and state-level plans.
- Revise the JSY monitoring indicators through a participatory and transparent process, ensuring that they track adverse pregnancy outcomes
- Strengthening the antenatal care facilities so that it can help in early detection of cases of preeclampsia

#### CONCLUSION:

Thus, it was concluded that preeclampsia is one of the major threats in the maternal morbidity and mortality globally.

Despite of the proper knowledge of the pathophysiology and etiology of the preeclampsia its management remains the challenge. One of the greatest change persuading preeclampsia scenarios is an early identification of it by strengthening the antenatal care facilities. This approach had increased the chances to diagnose the case which are often missed and also to save the lives of both the fetus and the mother

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