International Journal of Medical and Health Research
ISSN: 2454-9142
Received: 08-03-2019; Accepted: 11-04-2019
www.medicalsciencejournal.com
Volume 5; Issue 5; May 2019; Page No. 46-49

Assessment of the females suffering from pre-eclampsia with respect to maternal and perinatal outcome

Dr. Lata[1], Dr. Archana Sinha[2]
[1] Senior Resident, Department of Obstetrics Gynaecology, Indira Gandhi Institute of Medical Science, Patna, Bihar, India.
[2] Associate Professor, Department of Obstetrics Gynaecology, Indira Gandhi Institute of Medical Science, Patna, Bihar, India
Corresponding Author: Dr. Lata

Abstract
In developed world the incidence of pre-eclampsia is on declining trend due to availability of health care facilities to all pregnant women. Where as in developing countries universal provision of antenatal care is still lacking. Provision of timely and effective care to the women diagnosed with preeclampsia and eclampsia is important for avoiding the majority of morbidity and mortality caused by this disorder. Although all cases of Pre-eclampsia are not preventable but we can improve maternal and fetal outcome by good antenatal care, early detection of sign and symptoms of preeclampsia, prompt treatment and timely termination of pregnancy. This study was done to assess the maternal and fetal outcome in eclampsia patients and to evaluate various factors affecting its occurrence and outcome.
The present study was a retrospective study done in the Department of Obstetrics Gynaecology, Indira Gandhi Institute of Medical Science, Patna in February 2019. Total 60 cases were studied from July 2018 to January 2019 including 30 cases of normal pregnant females (group A) and 30 cases of pre-eclampsia were included in the group B. Data was collected from hospital records and the two groups were compared for maternal and fetal outcome.
Pre-eclampsia still remains an intractable obstetric emergency in the underprivileged world and a leading cause of maternal death. It is concluded that inadequate antenatal care, delay in women seeking help, delay in diagnosis and inadequate management of Pre-eclampsia patient at the peripheral center and delay in referral are the major contributors to the poor outcome of Pre-eclamptic women. By providing better health care facilities at all level, improving socioeconomic and education status of females, adequate antenatal supervision, timely identification of high-risk cases and timely intervention will improve maternal and fetal outcome in Pre-eclampsia.

Keywords: pre-eclampsia, eclampsia, hypertension, maternal morbidity and mortality

Introduction
Preeclampsia is defined as rise in blood pressure above 140/90 mmHg on two occasions at least 4 hours appart and 24 hours urine protein of more than equal to 3gml (equivalent to 2+ protein in spot sample) after 20 weeks of gestation in a previously normotensive and nonproteinuric female. Preeclampsia is often precluded by gestational hypertension. Preeclampsia affects at least 5-8% of pregnancies.
Hypertensive disorders of pregnancy includes group of disorders namely gestational hypertension, Preeclampsia and eclampsia. At the mild end of the spectrum is gestational hypertension, which occurs when a woman who previously had normal blood pressure develops high blood pressure when she is more than 20 weeks pregnant and her blood pressure returns to normal within 12 weeks after delivery. This problem usually occurs without other symptoms. In many cases, gestational hypertension does not harm the mother or fetus. Severe gestational hypertension, however, may be associated with preterm birth and infants who are small for their age at birth. Some women who have gestational hypertension later develop preeclampsia. Preeclampsia is gestational hypertension along with proteinurea. Preeclampsia can have grave complications such as preterm birth, IUGR, oligohydramnios, deranged liver function, pulmonary edema, increased rate of LSCS,etc. When Preeclampsia is complicated with seizurs, it is called eclampsia [1]. Many a times when Preeclampsia is left untreated, it may result in eclampsia [2].
Risk factors for pre-eclampsia include obesity, prior hypertension, older age, and diabetes mellitus. It is also more frequent in primigravida, multiple pregnancy. The underlying mechanism involves abnormal formation of blood vessels in the placenta amongst other factors. While historically both high blood pressure and protein in the urine were required to make the diagnosis, some definitions also include those with hypertension and any associated organ dysfunction. Blood pressure is defined as high when it is greater than 140 mmHg systolic or 90 mmHg diastolic at two separate times, more than four hours apart in a woman after twenty weeks of pregnancy. Pre-eclampsia is routinely screened for during prenatal care [3].
Recommendations for prevention include: aspirin in those at high risk, calcium supplementation in areas with low intake, and treatment of prior hypertension with medications. In those with pre-eclampsia delivery of the baby and placenta is the definitive treatment. However, timing of delivery depends on many factors including gestational age, fetal maturity, severity of Preeclampsia, maternal and fetal conditions [4]. Antihypertensives, such as labetalol and methyldopa, are used to control blood pressure in antenatal period. Magnesium sulfate may be used to prevent eclampsia in those with severe disease. Bedrest and salt intake have not been found to be useful for either treatment

or prevention [4].

Pre-eclampsia affects 2–8% of pregnancies worldwide. Hypertensive disorders of pregnancy (which include pre-eclampsia) are one of the most common causes of death due to pregnancy. They resulted in 46,900 deaths in 2015. Pre-eclampsia usually occurs after 32 weeks; however, if it occurs earlier it is associated with worse outcomes. Women who have had pre-eclampsia are at increased risk of heart disease and stroke later in life [5].

Pre-eclampsia can mimic and be confused with many other diseases, including chronic hypertension, chronic renal disease, primary seizure disorders, gallbladder and pancreatic disease, immune or thrombotic thrombocytopenic purpura, antiphospholipid syndrome and hemolytic-uremic syndrome. It must be considered a possibility in any pregnant woman beyond 20 weeks of gestation. It is particularly difficult to diagnose when pre-existing conditions such as hypertension are present [38]. Women with acute fatty liver of pregnancy may also present with elevated blood pressure and protein in the urine, but differ by the extent of liver damage. Other disorders that can cause high blood pressure include thyrotoxicosis, pheochromocytoma, and drug misuse [6].

In developed world the incidence of pre-eclampsia is on declining trend due to availability of health care facilities to all pregnant women. Where as in developing countries universal provision of antenatal care is still lacking. Provision of timely and effective care to the women diagnosed with preeclampsia and eclampsia is important for avoiding the majority of morbidity and mortality caused by this disorder.

Although all cases of Pre-eclampsia are not preventable but we can improve maternal and fetal outcome by good antenatal care, early detection of sign and symptoms of preeclampsia, prompt treatment and timely termination of pregnancy. This study was done to assess the maternal and fetal outcome in eclampsia patients and to evaluate various factors affecting its occurrence and outcome.

Methodology

The present study was done in the Department of Obstetrics Gynaecology, Indira Gandhi Institute of Medical Science, in February 2019. It is a retrospective study including total of 60 cases from July 2018 to January 2019. 30 cases of normal pregnant females were assigned in group A and 30 cases of pre-eclampsia were assigned in the group B. The outcome of two groups was compared in terms of maternal and perinatal outcome.

Information related to mother such as age, height, weight, socio-economic status (SES), parity, gestational age, diseases during pregnancy, mode of delivery,and information related to baby such as birth weight and sex, NICU admissions, birth asphyxia(APGAR), were extracted from the records. Following was the inclusion and exclusion criteria of the study.

Inclusion Criteria: All pregnant women at or beyond 28 weeks of gestation, with singleton pregnancy and in the age group between 20-40 years are included.

Exclusion Criteria: Women with chronic hypertension, renal disease, cardio vascular disease, thyroid disease, liver disease, diabetes mellitus, twin pregnancy and molar pregnancy are excluded.

Results & Discussion

Pre-eclampsia and Eclampsia still remains a major problem in developing countries. Pregnancy induced hypertension is one of the most extensively researched subjects in obstetrics. Still the etiology remains an enigma to us. Though the incidence of pre-eclampsia and eclampsia is on the decline, still it remains the major contributor to poor maternal and foetal outcome. The fact that pre-eclampsia, eclampsia is largely a preventable disease is established by the negligible incidence of preeclampsia and eclampsia with proper antenatal care and prompt treatment of pre-eclampsia. In pre-eclampsia and eclampsia, pathology should be understood and that it involves multiorgan dysfunction should be taken into account. The early use of antihypertensive drugs, optimum timing of delivery and strict fluid balance, anticonvulsants in cases of eclampsia will help to achieve successful outcome. Early transfer to specialist centre is important and the referral the referral centers should be well equipped to treat such critically ill patients.

Table 1: Comparison of Clinical Findings

Group	**Group A**	**Group B**
Cases of	**Control: Normal pregnant women's**	**Case: pre-eclampsia Cases**
No, of Cases	30	30
Age	22-35	24-38
Systolic Blood Pressure (mmHg)	110- 130	140- 200
Diastolic Blood Pressure (mmHg)	72- 84	90 - 120
Haemoglobin (gm%)	11.3 – 13.5	10.8 – 14.6

Table 2: Maternal Parameters

Group		**Group A**	**Group B**
Cases of		**Control: Normal pregnant women's**	**Case: pre-eclampsia Cases**
Total No. of Cases		**30**	**30**
Number of Cases Observed			
Socio-economic status			
Lower class		21	19
Middle class		9	11
Maternal education	Illiterate	10	8
	primary	20	22
Pre pregnancy weight < 45 kg		23	6
Spacing < 2years		16	20

Primigravida	15	18
Bad obstetrics history	16	10
Maternal Infections	3	2
History of infertility	2	3
Tobacco consumption	4	2
Heavy physical activity	14	16
Caesarean section delivery	15	13

Table 3: Maternal Outcome

Group	**Group A**	**Group B**
Cases of	**Control: Normal pregnant women's**	**Case: pre-eclampsia Cases**
Total No. of Cases	**30**	**30**
Number of Cases Observed		
Maternal deaths	0	0
Maternal near miss	1	4
Maternal severe outcomes	3	12

Table 4: Fetal Outcome

Group	**Group A**	**Group B**
Cases of	**Control: Normal pregnant women's**	**Case: pre-eclampsia Cases**
Total No. of Cases	**30**	**30**
	Number of Cases Observed	
Fetal death	0	0
Early neonatal death	0	2
Perinatal death	1	2
Preterm birth	3	6
NICU admission	3	8

Maternal near-miss cases are four times more frequent in women with pre-eclampsia, increasing to up to 60 times more frequent if eclampsia occurs, when compared with women without these conditions. In eclampsia, most of these potentially life-threatening conditions involve the central nervous system, as observed by the markers of neurological dysfunction involved: coma or loss of consciousness lasting 12 hours or more; metabolic coma (loss of consciousness and the presence of glucose and ketoacids in the urine); stroke; or status epilepticus, uncontrollable fits or total paralysis. Eclamptic encephalopathy is essentially a vasogenic oedema with disruption of the blood–brain barrier. Magnetic resonance imaging (MRI) abnormalities include both white and grey matter, commonly as bilateral hypodensities in the occipital, posterior parietal or high frontal lobe. In most cases, these abnormalities are reversible, together with the clinical symptoms, if adequate treatment (mainly a decrease in blood pressure and the administration of magnesium sulfate) is started [7].

Near-miss cases related to pre-eclampsia were more frequently identified by markers of coagulation/haematological dysfunction [clotting failure, transfusion of ≥5 units of blood/red cells and acute thrombocytopenia <50,000 platelets)]. Although not specific to pre-eclampsia [8], low platelet count is associated with an increased risk of abnormal coagulation and maternal adverse outcomes in these women [9-10]. Prompt recognition and treatment with the timely administration of blood products are crucial in the management of such life-threatening complications [11].

The World Health Organization Multicountry Survey on Maternal and Newborn Health (WHOMCS) was conducted primarily in secondary and tertiary health centres, and the data may not be representative of outcomes in smaller facilities or in the community. The primary data source was routine hospital records, and there is a possibility of under-identification of nearmiss cases and under-estimation of severity in settings in which basic laboratory tests may not be available. As a result of the pragmatic nature of this survey, and in order to ensure feasibility, only short-term (maximum 7 days) intra-hospital maternal and perinatal morbidity and mortality data were collected, and so a proportion of deaths, or near-miss cases developed or recognised later, could be missed.

Preeclampsia is associated with high perinatal morbidity and mortality, In this study the perinatal death rate was 6.67% and this was less than perinatal death rate of 34% reported in Benin [12]. The incidence of low birth weight and still birth babies was noted to increase in association with increasing severity of proteinuria. This relationship was statistically significant in this study. Similar studies have also confirmed that presence of heavy proteinuria potentiated the adverse outcome of the pre-eclampsia on perinatal outcome [13].

The rate of preterm infants and small for gestational age infants is higher in women with eclampsia [14-15]. This is similar to what we found in our study. The high rates of perinatal mortality could be explained by the earlier mentioned factors like delays in referral, increased onset of fit to delivery interval, presence of multiple co morbid complications. Our study indicate that majority of perinatal mortality are due to low birth weight and birth asphyxia. The significant number of low birth weight in the study is due to higher incidence of prematurity in patients of eclampsia, mostly iatrogenic.

Major contributors to the poor outcome were low percentage of antenatal attendance, inadequate antenatal care and consequently delayed presentation to the hospital, mostly with complications. Peripheral health workers should be more vigilant about early identification and treatment of women with HDP. The referring physician should stabilize

the patient first and arrange for timely referral. Our best chance for improving the prognosis of these patients lie within improvement in basic health care provided to all pregnant women. Universal antenatal care should be the primary goal, so that high risk women could be recognized early before landing up into complications

Conclusion

Pre-eclampsia still remains an intractable obstetric emergency in the underprivileged world and a leading cause of maternal death. It is concluded that inadequate antenatal care, delay in women seeking help, delay in diagnosis and inadequate management of Pre-eclampsia patient at the peripheral center and delay in referral are the major contributors to the poor outcome of Pre-eclamptic women. By providing better health care facilities at all level, improving socioeconomic and education status of females, adequate antenatal supervision, timely identification of high-risk cases and timely intervention will improve maternal and fetal outcome in Pre-eclampsia.

References

1. https://www.nichd.nih.gov/health/topics/preeclampsia/conditioninfo
2. Al-Jameil N, Aziz Khan F, Fareed Khan M, Tabassum H. A brief overview of preeclampsia. Journal of Clinical Medicine Research. 2014; 6(1):1-7.
3. American College of Obstetricians Gynecologists; Task Force on Hypertension in Pregnancy (Nov). Hypertension in pregnancy. Report of the American College of Obstetricians and Gynecologists' Task Force on Hypertension in Pregnancy (PDF). Obstet. Gynecol. 2013; 122(5):1122-31.
4. WHO recommendations for prevention and treatment of pre-eclampsia and eclampsia (PDF). 2011. ISBN 978-92-4-154833-5. Archived (PDF) from the original on 2015-05-13.
5. Steegers Eric AP. Von Dadelszen, Peter; Duvekot, Johannes J; Pijnenborg, Robert. Pre-eclampsia. The Lancet. 2010; 376 (9741):631-644.
6. Arulkumaran N, Lightstone L. Severe pre-eclampsia and hypertensive crises. Best Practice & Research Clinical Obstetrics & Gynaecology. 2013; 27(6):877-884.
7. Karumanchi SA, Lindheimer MD. Advances in the understanding of eclampsia. Curr Hypertens Rep. 2008; 10:305-12.
8. Rattray DD, O'Connell CM, Baskett TF. Acute disseminated intravascular coagulation in obstetrics: a tertiary centre population review (1980 to 2009). J Obstet Gynaecol Can. 2012; 34:341-7.
9. Von Dadelszen P, Magee LA, Devarakonda RM, Hamilton T, Ainsworth LM, Yin R, *et al*. The prediction of adverse maternal outcomes in preeclampsia. J Obstet Gynaecol Can. 2004; 26:871-9.
10. Laskin S, Payne B, Hutcheon JA, Qu Z, Douglas MJ, Ford J, *et al*. The role of platelet counts in the assessment of inpatient women with preeclampsia. J Obstet Gynaecol Can. 2011; 33:900-8.
11. Levy JA, Murphy LD. Thrombocytopenia in pregnancy. J Am Board Fam Pract. 2002; 15:290-7.
12. Report of lhe Naliona[High B[ood Pr"ssure Educa!ion Program: Working group report on high blood pressure in pregnancy. Am J QbSlct Gyneeo[2000; [83: S [-S22.
13. Onyiruka AN. Ok"fo AA. Perinatal Outcome in Patients with pre-cclampsia in Benin City, Nigeria. Trop J Obstet Gynaecol. 2004; 21(2):148-52.
14. Chappell L, Enye S, Seed P, Briley A, Poston L, Shennan A. Adverse perinatal outcomes and risk factors for preeclampsia in women with chronic hypertension. Hypertension. 2008; 51:1002-9.
15. Ray JG, Burrows RF, Burrows EA, Vermeulen MJ. MOS HIP: McMaster outcome study of hypertension in pregnancy. Early Hum Dev. 2001; 64:129-43.