ORIGINAL ARTICLE

FREQUENCY OF MATERNAL MORTALITY AND MORBIDITY IN PREGNANCY-INDUCED HYPERTENSION

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Background: Pregnancy-induced hypertension (PIH) is defines as hypertension in pregnancy, and is sustained blood pressure >140 mm Hg systolic or 90 mm Hg diastolic. Objective of this study was to see the maternal outcome in terms of morbidity and mortality in PIH. **Methods**: This descriptive study was conducted in Obstetrics and Gynaecology Unit of Fauji Foundation Hospital, Rawalpindi from January to December 2010. Both booked and un-booked cases were selected after fulfilling inclusion criteria. A detailed history and clinical examination was recorded and relevant investigations were performed. Patients were monitored for rise in blood pressure, development of complications related to hypertensions in pregnancy as well as maternal and perinatal outcome. **Results**: During this period, 100 patients were admitted with pregnancy-induced hypertension. Majority were un-booked. Primigravida were 60 (60%), and were in age group 21–30 year, remaining were above 30 year. Four patients had placental abruption, 2 pulmonary oedema, 5 HELLP syndrome, 2 severe renal impairment, 20 elevated liver enzyme, 23 uncontrolled blood pressure, 20 server preeclampsia, 10 thrombocytopenia, 3 eclampsia, 10 had impaired coagulation profile, and 1 had maternal death. **Conclusion:** Pregnancy induced hypertension is a major cause of maternal mortality and morbidity. In Pakistan, its incidence and related mortality are high due to lack of adequate antenatal care.

Keywords: Maternal Mortality, Maternal Morbidity, Pregnancy

INTRODUCTION

Pregnancy-induced hypertension (PIH) occurs in 5% of pregnancies. American Congress of Obstetricians and Gynaecologists (ACOG) defined hypertension in pregnancy as sustained blood pressure of 140 mm Hg systolic or 90 mm Hg diastolic or greater. The onset of signs and symptoms of PIH is usually after 20 weeks gestation. ACOG defined preeclampsia as pregnancy-induced hypertension accompanied with renal involvement and proteinuria. Eclampsia results from preeclampsia that progresses to seizures. The HELLP syndrome (haemolysis, elevated liver enzymes, low platelet count) is a sub category of PIH.

Arterial hypertension is a problem in 7–10% of pregnancies and is a reason of increased risk of prenatal complications including death of a mother or a child.[1,2] Among various forms of pregnancy hypertension, preeclampsia and eclampsia are responsible for most of serious complications of elevated blood pressure. In USA 15% of mortality rate in pregnant women is caused by hypertension and its complications, second cause of death, after pulmonary embolism in this population [2]

It is underlined in recent ESH/ESC guidelines that women with previous gestational hypertension seem to be at increased risk of cardiovascular disease in later life. It may depend on relative hyperandrogenic state and further alterations in endothelial function, carbohydrates and lipid metabolism, which have been shown in otherwise healthy women with history of gestational hypertension.[3]

The objective of this study was to see the maternal outcome in terms of morbidity and mortality in pregnancy-induced hypertension.

MATERIAL AND METHODS

This descriptive study was conducted in Obstetrics and Gynaecology Unit of Fauji Foundation Hospital, Rawalpindi from January to December 2010. All pregnant women with systolic blood pressure >140 mmHg and/or diastolic blood pressure >90 mmHg on two occasions four hours apart after 20 weeks gestation were included in the study**.**

Patients with essential hypertension, heart disease, liver diseases, chronic renal disease, and convulsions due to epilepsy or other causes were excluded. A detailed history, clinical examination, and investigations, e.g., complete blood count, platelet count, clotting profile, renal function tests, liver function tests, urine for protein and fundoscopy were carried on all patients. Immediate management included passing an airway, seizure control and prevention, control of blood pressure, intake-output record. Induction of labour or delivery by Caesarean section in eclamptic patients was carried out. High dependency care was provided to patients who were continuously monitored till they were stable and recovered.

Maternal outcome in terms of morbidity and mortality was recorded. Data were collected on a proforma and results were compiled using SPSS-11.

RESULTS

During the study period, 100 women having PIH were admitted, only 6 were booked cases and the rest were un-booked presenting in emergency. Two were booked in our hospital and the other 4 had antenatal care in the periphery hospitals. Majority (60%) were primigravida with age group 21–30 years; remaining 40% were multiparous having age more than 30 years. Forty-five percent patients had 28–36 weeks gestation, 53% had term pregnancy and 2 patients had pregnancy less than 28 weeks. All patients suffered some form of morbidity.

Thrombocytopenia, impaired liver function, and coagulation derangement were common. Four women with pregnancy-induced hypertension had placental abruption, 2 had pulmonary oedema, 5 had HELLP syndrome, 2 had severe renal impairment 20 had elevated liver enzymes, 23 developed uncontrolled blood pressure, 20 had severe preeclampsia, 10 patients had thrombocytopenia, 3 women developed eclamptic fits, 10 had coagulation derangement, and 1 death of a primigravida with twin pregnancy at term (Table-1).

Table-1: **Frequency of maternal mortality and morbidity in pregnancy-induced hypertension**

Complications	Percent
Placental abruption	4
Pulmonary oedema	2
HELLP syndrome	5
Severe renal impairment	1
Elevated liver enzymes	20
Uncontrolled blood pressure	23
Severe Preeclampsia	20
Impaired coagulation profile	10
Thrombocytopenic	10
Eclampsia	3
Maternal death	1

DISCUSSION

Some form of hypertension occurs in approximately 15–20% of pregnancies. According to World Health Organization, hypertensive disease during pregnancy is a major cause of perinatal mortality and morbidity, preeclampsia occurring in 3–8% of pregnancies is a major cause of maternal mortality.[4] There were 20 cases of severe preeclampsia in our study usually seen in women before 32 weeks of gestation as in study by Sibai.[5] The incidence of eclampsia in the West is about 1 in 1,600 pregnancies.[6] Frequency of eclampsia in our study is 3/100 whereas in a study from Peshawar[7], frequency of eclampsia was 11.5/1,000. Naseer-ud-din *et al* reported 18/1,000 from Multan[8], and it has been reported as 10/1,000 deliveries in a study from Lahore[9].

Most of the patients in our study were primigravida in age group 21–30 years. In a study from Banglore[10], patients were mostly of 20–35 years group and mild pregnancy-induced hypertension was common compared to severe degree. There were 23 cases of uncontrolled hypertension in our study. Ten women with pregnancy-induced hypertension in our study had impaired coagulation profile, out of which 2 had thrombo-embolism. Hyon Son Won[11] reported 27 cases of venous thrombo-embolism in patients with pregnancy-included hypertension.

In our study, 4% patients had placental abruption and 2% had pulmonary oedema, whereas a study in Peshawar[8] reported 9.6% placental abruption and 18.8% pulmonary oedema in women with pregnancy-induced hypertensive disorder. Levy and Murphy observed pregnancy-induced hypertension accounting for approximately 21% cases of thrombocytopenia in pregnancy, whereas in our study 10% of women with PIH has mild to moderate thrombocytopenia.[12] HELLP syndrome occurs in about 1–2 out 1,000 pregnancy induced hypertension and in 10–20% pregnant women with severe preeclampsia or eclampsia.[13] In our study 5% pregnant women with PIH had HELLP syndrome. Severe pregnancy induced hypertension was the main cause of acute renal failure in late pregnancy accounting for 19 (86.4%) cases in Beijing Friendship Hospital[14], whereas 2 cases of severe renal impairment in PIH were recorded in our study.

There was one maternal death of a patient having pregnancy-induced hypertension due to cerebrovascular accident. In Lady Reading Hospital, Peshawar 42.16% maternal deaths due to hypertensive disorders were recorded during 1998–2004.[15] Globally it counts for 12% of maternal deaths.[16] Our results show a low mortality rate compared to others which may be due to lesser number of patients in our study.

CONCLUSION

Maternal morbidity and mortality in complications related to pregnancy induced hypertension occur due to lack of good antenatal care. Timely referral to tertiary care hospitals can reduce mortality/morbidity due to complications of pregnancy-induced hypertension.

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