PECULIAR RISK FACTORS AND COMPLICATIONS OF PREGNANCY INDUCED HYPERTENSION IN A TERTIARY CARE HOSPITAL OF PESHAWAR

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ABSTRACT

Objectives: To determine the frequency of risk factors and complications associated with pregnancy-induced hypertension (PIH) in a hospital based study.

Study Design: Desriptive Study

Place and Duratuion: study was conducted in obstetric and gynecology department of Khyber teaching hospital Peshawar from March 2006 to March 2007.

Patients and Methods: Sixty eight patients were included in the study. Relevant informations was recorded from patients and treatment chart of the patients on a questionnaire designed in accordance with the objectives of the study.

Results: The age range of the patients was from 14 to 48 years with mean age of 27.5 yeas, and mode of 26 years. The distribution of symptoms was: Increased blood pressure (100%) edema feet (86.76%), nausea, vomiting (32.34%) sudden weight gain (27.94%) visual changes such as blurred or double vision (22.05%) etc. Frequency of risk factors of PIH was: Primigravida (8.72%) previous pre-eclampsia (7.35%) diabetes mellitus (16.17%) obesity (10.29%), chronic hypertension (7.35%), large placenta (4.4%). While no risk factors recorded in 10.29% patients. Complications of PIH occurred only in 52.94% cases. Frequency of various complications was: haemolysis, elevated liver enzymes and low platelets (HELLP) 80.55%, convulsions 16.66%, pulmonary edema 8.33%, cortical block and intra uterine growth retardation in 2.77% each.

Conclusion: Increased blood pressure, edema feet, sudden weight gain, visual changes were main symptoms of PIH in our patients. Primigravida, previous pre-eclampsia, diabetes mellitus, chronic hypertension, obesity and large placenta were found to be as major risk factors of PIH. HELLP, convulsions and pulmonary edema were recorded major complication of PIH.

Key words: Pregnancy induced hypertension, risk factors, complication.

INTRODUCTION

Pregnancy-induced hypertension (PIH) is a form of high blood pressure in pregnancy. It occurs in about 5 percent to 8 percent of all pregnancies. Pregnancy-induced hypertension is also called toxemia or preeclampsia. It occurs most often in young women with first pregnancy. It is more common in twin pregnancies, in women with chronic hypertension, preexisting diabetes, and in women who had PIH in a previous pregnancy. Usually, there are three primary characteristics of this condition, high blood pressure (a blood pressure reading higher than 140/90 mm Hg, or a significant increase in one or both pressures), protein in the urine and tect.

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Chronic hypertension during pregnancy is associated with an increased risk for birth of small for gestational age offspring. [1]

Eclampsia is the second major cause of maternal mortality in Pakistan. Its incidence is 2.31% in ours country [2]. Pre-eclampsia and gestational hypertension shared many risk factors, although there are differences that need further evaluation. Both conditions significantly increased morbidity and mortality. Conversely, pre-eclampsia and unexplained intrauterine growth restriction, often assumed to be related to placental insufficiency, seem to be independent biologic entities [3].

PIH is also a major cause of maternal and perinatal morbidity. The majority of adverse pregnancy outcomes occur in patients who develop severe hypertension or severe pre-eclampsia, and in those who develop the clinical manifestations before 34 weeks' gestation. There is some concern regarding

neonatal as a result of gestational hypertension and preeclampsia [4]. HELLP is a major complication of PIH. The immediate termination of a pregnancy in which HELLP syndrome emerges may save the patient's life [5].

Present study was designed as to determine the risk factor and complications of PIH in a hospital-based study.

PATIENTS AND METHODS

This descriptive study was conducted in obstetric and gynecology department, Khyber teaching hospital, Peshawar, from March 2006 to March 2007. A total of 68 patients with established diagnosis of pregnancy-induced hypertension (PIH) were randomly selected.

Inclusion criteria were all patients with established diagnosis of PIH, admitted in obstetric and gynecology department, Khyber teaching hospital, Peshawar.

A detailed history of patients was taken with the help of a pre-designed questionnaire, prepared in accordance with the objectives of this study. Blood pressure of each patient was hourly recorded. Duration and family history were also recorded from every patient.

Statistical Analyses

Data had been analyzed using SPSS version 10. Frequency and percentage were used to describe the data.

Table-1: Age range of patients with PIH n=68

Age range	No. of patients (%)
14-25 years	15 (22.05)
26-35 years	36 (52.94)
36-45 years	11 (16.17)
Up to 48 years	6 (8.82)

Table-2: Symptoms of PIH recorded in patients with PIH n=68

Symptoms of PIH	No. of patients %
Increased blood pressure	68 (100)
Protein in the urine	68 (100)
Edema (swelling)	59 (86.7)
Nausea, vomiting	22 (32.34)
Sudden weight gain	19 (27.94)
Visual changes such as blurred or double vision	15 (22.05)
Right-sided upper abdominal pain or pain around the stomach	11 (16.17)
Urinating small amounts	07 (10.29)

Out of total 45 (66.17%) patients had multiple complications

RESULTS

The age range of the patients was from 14 to 48 years with mean age of 27.5 yeas. The mode of age recorded was 26 years. (Table-1). Major symptoms were: Increased blood pressure100%, protein in urine 100%, edema (swelling) 86.76%, nausea, vomiting 32.34%, sudden weight gain 27.94%, visual changes such as blurred or double vision 22.05% etc. (Table-2).

Frequency of risk factors of PIH was: Primigravida 8.72%, previous pre-eclampsia 7.35%, diabetes mellitus 16.17%, obesity 10.29%, chronic hypertension 7.35%, large placenta 4.4%, chronic renal diseases, hypothyroidism, hyditiform mole 2.94% each, migrain, under weight mother, multiple pregnancy, family history of PIH, each recorded in 1.47% cases. While no risk factors recorded in 10.29% patients (Table-3). Distribution of complications was: HELLP 80.55%, convulsions 16.66%, pulmonary edema 8.33%, cortical block and intra uterine growth retardation in 2.77% each (Table-4).

Complications were recorded only in 36 patients. Out of 36 patients 4 had multiple complications in time.

Table-3: Risk factors of pregnancy-induced hypertension: n=68

Risk factors of PIH	No. of patients (%)
Primigravida	6 (8.72)
Previous pre-eclampsia	5 (7.35)
Obesity	7 (10.29)
Diabetes mellitus	11 (16.17)
Chronic hypertension	5 (7.35)
Chronic renal diseases	2 (2.94)
Migrain	1 (1.47)
Large placenta	3 (4.4)
Hypothyroidism	2 (2.94)
Hyditiform mole	2 (2.94)
Under weight mother	1 (1.47)
Family history of PIH	1 (1.47)
Multiple pregnancy	1 (1.47)
No apparent cause	7 (10.29)

Table-4: Complications recorded in patients with PIH (n=36)

Complication of PIH	No. of patients (%)
HELLP	29 (80.55)
Convulsions	6 (16.66)
Pulmonary edema	3 (8.33)
Cortical block	1 (2.77)
Intra uterine growth retardation	1 (2.77)

DISCUSSION

Typically, pre-eclampsia occurs after 20 weeks gestation (in the late 2nd or 3rd trimesters or middle to late pregnancy), though it can occur earlier. Proper prenatal care is essential to diagnose and manage pre-eclampsia. Management of pre-eclampsia often culminates in induced delivery of a very pre-term infant. While early termination protects the fetus from an intrauterine death, the newborn then faces increased risks associated with pre-term delivery [6].

In present study our finding were increased blood pressure, edema, nausea, vomiting, sudden weight gain, visual changes such as blurred or double vision etc. Schbert and Abernathy (2006) [7], Alonso [8] and Adukauskiene [9] have also documented the same like clinical; features in their respective trials on the PIH. Every family looks forward to a healthy pregnancy and to the birth of a healthy newborn. And, for the vast majority of women, pregnancy follows a fairly routine course. But, for some, there may be unexpected difficulties and challenges along the way with a high-risk pregnancy. In our study the risk factors were primigravida, previous pre-eclampsia, diabetes mellitus, obesity, chronic hypertension, large placenta, chronic renal diseases, hypothyroidism, hyditiform mole, migrain, under weight mother, multiple pregnancy and family history of PIH. While no risk factors recorded in 10.29% patients. The results of a study from Grunewald, Hjertberg, Kublickiene (2006) [10] shows consistence with our findings. Hypertension complicates 5.38% of all pregnancies. Pre-eclampsia and its variants remain the major cause of hypertension in pregnant women. Hypertension during pregnancy is responsible for high fetal mortality and low birth weight [11]. In present complications of PIH recorded only in 52.94% cases. Out of these Haemolysis, Elevated Liver Enzymes and Low Platelets (HELLP) was recorded in 80.55% cases. HELLP syndrome is a grave, life threatening form of preeclampsia, which was named by Weinstein in 1982, on the basis of characteristic changes in laboratory findings (haemolysis, elevated level of liver enzymes and thrombocytopenia) [12]. The overall incidence of HELLP syndrome in Pakistan is 0.4%. Women with severe hypertension in pregnancy manifesting with HELLP syndrome show a significantly greater frequency of developing DIC, seizures and acute renal failure. Therefore, their care necessitates intensive monitoring to preclude development of these complications [13]. 16.66% out of total complications were convulsions. Nevertheless, eclampsia isn't just an ordinary hypertensive encephalopathy because other pathogenic mechanisms are involved in its appearance. The main neuropathologic changes are multifocal vasogenic edema, perivascular multiple micro-infarctions and petechial hemorrhages. Neurological clinical manifestations are convulsions, headache, visual disturbances and rarely other discrete focal neurological symptoms. Eclampsia is a high-risk factor for onset of hemorrhagic or ischemic stroke [14]. Pulmonary edema recorded in 8.33% cases in our patient who had developed complications. In women with pre-eclampsia, inability to increase stroke index (SI) at the moment of delivery may suggest dysfunction of the left ventricle to adapt to volume load caused by delivery and prompts concern for the increased risk of pulmonary oedema15. We observed intra-uterine growth retardation in 2.77% of patients who had complications due to PIH. In another study the frequency of intra-uterine growth retardation (IVGR) was 2.1%. 46.8% of the patients were primiparous. The mean age of the patients was 30 years. 26% of the patients developed toxemia. The etiology was predominantly renovascular-syndromes, urinary infections, and idiopathic hypotrophy [16].

CONCLUSION

Increased blood pressures, edema, sudden weight gain; visual changes were main features of PIH in our study. Primigravida, previous pre-eclampsia, diabetes mellitus, chronic hypertension, obesity and large placenta are major risk factors of PIH. HELLP, convulsions and

pulmonary edema were recorded as major complication of PIH.

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