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Management of Pregnancy Induced Hypertension

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Abstract

Aims: To observe the management and treatment of pregnancy induced hypertension that is to prevent the condition from becoming worse and to prevent it from causing other complications.

Methods: In our observational study, a total of 30 pregnancy induced hypertension patients were studied. A Performa was designed to collect data related to the patient's treatment.

Results: A large majority of patients reported hypertension after 2nd trimester. Headache, limb swelling and vertigo were the common presenting complaints. These complaints were treated earlier by self medication and home remedies that further worsen the condition of patient and lead to eclampsia in few patients. in emergency management of pregnancy induced hypertension, isosorbide dinitrate and/or Mg sulphate injection were given. Methyldopa and/or Nifedipine were prescribed for oral use after discharge from hospital. There was no involvement of a pharmacist in the treatment of patients.

Conclusion: There is a need for pharmacist intervention in the management of pregnancy induced hypertension patients and to educate the pregnant mothers about the importance of healthy and complete nutrition during the pregnancy.

Key words: *Pregnancy induced hypertension (P.I.H), management.*

INTRODUCTION:

Hypertension remains a leading cause of perinatal morbidity and mortality. Classification of the hypertensive disorders of pregnancy is 1. preeclampsia-eclampsia, 2. chronic hypertension, 3. chronic hypertension with superimposed preeclampsia-eclampsia. Preeclampsia is characterized by the triad of hypertension, proteinuria, and edema but these findings are not specific. Although the etiology and pathogenesis of preeclampsia remain unknown, several factors such as abnormalities in prostaglandin systems, in coagulation process, derangements of the endothelium and so on. [1]

The onset of severe gestational hypertension and/or severe preeclampsia before 35 weeks' gestation is associated with significant maternal and perinatal complications. Women with diagnosed gestational hypertension-preeclampsia require close evaluation of maternal and fetal conditions for the duration of pregnancy, and those with severe disease should be managed in-hospital. The decision between delivery and expectant management depends on fetal gestational age, fetal status, and severity of maternal condition at time of evaluation. Expectant management is possible in a select group of women with severe preeclampsia before 32 weeks' gestation. Steroids are effective in reducing neonatal mortality and morbidity when administered to those with severe disease between 24 and 34 weeks' gestation. Magnesium sulfate should be used during labor and for at least 24 hours postpartum to prevent seizures in all women with severe disease. There is an urgent need to conduct randomized trials to determine the efficacy and safety of antihypertensive drugs in women with mild hypertension-preeclampsia. There is also a need to conduct a randomized trial to determine the benefits and risks of magnesium sulfate during labor and postpartum in women with mild preeclampsia. [2]

During normal pregnancy, systolic pressure changes little; however, diastolic pressure decreases by an average of 10 mm Hg early in gestation (13 to 20 weeks) and rises again to prepregnancy levels in the third trimester. The term "hypertension in pregnancy" describes a broad spectrum of conditions in which blood pressure varies widely. [3]

The overall rate of recurrent preeclampsia in women who decreased their BMIs between

pregnancies was 12.8% (risk ratio 0.70, confidence interval 0.60-0.81) compared with 14.8% if BMI was maintained and 18.5% in those who increased their BMIs (risk ratio 1.29, confidence interval 1.20-1.38). Within the normal weight, overweight, and obese weight categories, women who decreased BMI between pregnancies were less likely to experience recurrent preeclampsia. Women in all weight categories who increased their BMIs between pregnancies were more likely to experience recurrent preeclampsia. [4]

Small placental surface area at birth is associated with an increased risk of hypertension in the offspring in later life. Preeclampsia is associated with impaired implantation and with increased blood pressure in the offspring. [**5**]

The pharmacological properties of atenolol suggest its possible usefulness in pregnancy-induced hypertension. [6]

The treatment of pregnancy-induced hypertension enumerates the most common problems encountered when treating the disease. These problems include: terminology, etiology and pathogenesis, known facts, failure to identify the patient, loss of life for mother and baby, complications, recognition of early disease, and treatment not uniform or individualized. The severe forms of the disease are preventable and should never occur, but once present they should yield a zero maternal mortality rate and a fetal salvage of greater than 90%. Proper therapy of severe disease is primarily the use of pharmacologic doses of magnesium sulfate given intravenously and the prevention of a cerebral vascular accident in the mother. Induction of labor and removal of the products of conception will cure the disease. [7]

Both preeclampsia and preterm delivery are important complications in pregnancy and are leading causes for maternal and perinatal morbidity and mortality. The underlying molecular mechanisms of both diseases remain unknown, thus treatments (beta2-stimulants and magnesium sulfate) are essentially symptomatic. Both molecules have molecular weights less than 5-8kDa and cross the placental barrier thus exerting their effects on the fetus. In addition, the fetus produces peptide hormones that are highly vasoactive and uterotonic and increase in response to maternal stress and with continued development. [8]

Aims:

My main objectives of the study were to study

- Predisposing factors associated with PIH
- Complications of PIH
- Management of PIH
- Preventions for PIH

MATERIALS AND METHODS:

The study was conducted to see the management of pregnancy induced hypertension.

Case history of 30 P.I.H patients admitted in Sir Ganga Ram Hospital and Lady Wallingdon Hospital Lahore from 14th June to 14th July, 2010. were collected and different parameters were observed and entered into a Performa WHICH was designed to collect data related to the patient's symptoms, diagnosis, treatment plan, drugs given and lifestyle modifications

Inclusion Criteria:

Patients with Pregnancy Induced Hypertension.

Exclusion criteria:

Patients with normal blood pressure during pregnancy were excluded.

RESULTS:

Thirty patients of Pregnancy induced hypertension were studied.

Figure 1: shows that the patients that I observed, 50% were between the ages 20 to 29, 43.3% were above 30 years of age and 6.6% were below 20 years of age.

Figure 2: shows that 100% of patients reported that they did never face any irregularity in their menstrual cycle.

Figure 3: shows that 43% patients had 1 and 2 kids.23.3% did not have any kid at all while 10% had more than 5

kids. Same percentage was that of patients having 3, 4 kids

Figure 4: shows that 50% patients were expecting after more than 4 years.

Figure 5: shows that the onset of hypertension was 3rd trimester in 56% patients.23.3% patients reported PIH in 2nd trimester and 20% in 1st trimester.

Figure 6: shows that 56% patient told that there was sudden onset of high blood pressure and 44% said that the onset was gradual.

Figure 7: shows that 76.6% patients reported headache and swelling in limps as their presenting complaints of PIH. 20% vertigo dizziness and 3.3% were suffered from unconsciousness.

Figure 8: shows that out of 30 patients, 60% followed healthy diet

Figure 9: shows that 63.3% took house remedy

Figure 10: shows that The drugs given to treat PIH included Isoket, Aldomet, Adalat, Mgso4, Hydralazine, And Loprin

FIGURE 1 Graph showing the number of patients in specific age groups

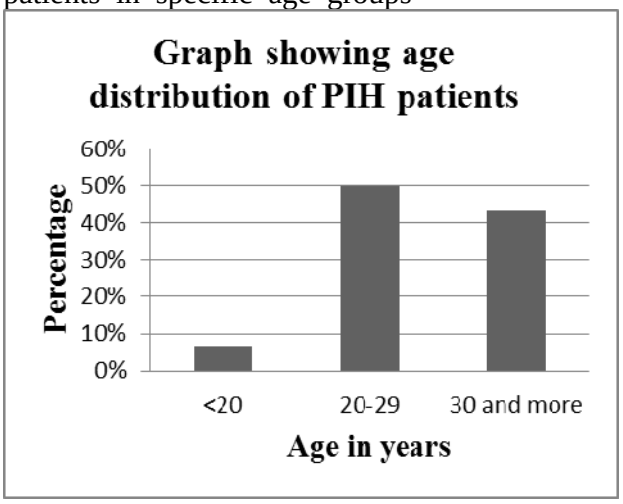


FIGURE 2 Graph showing regularity of menstrual cycle in patients

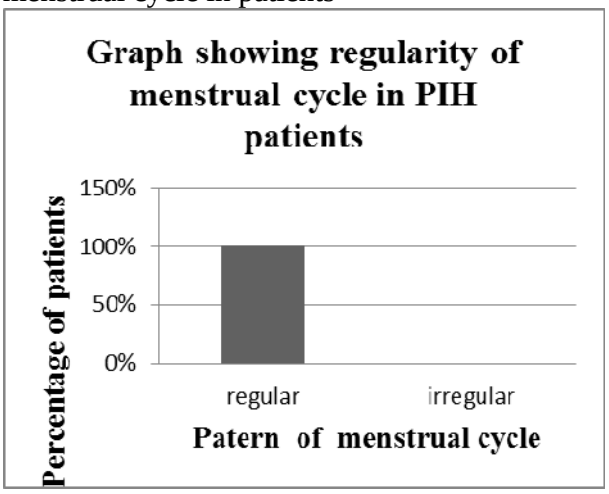


FIGURE 3 Graph showing number of kids patients have

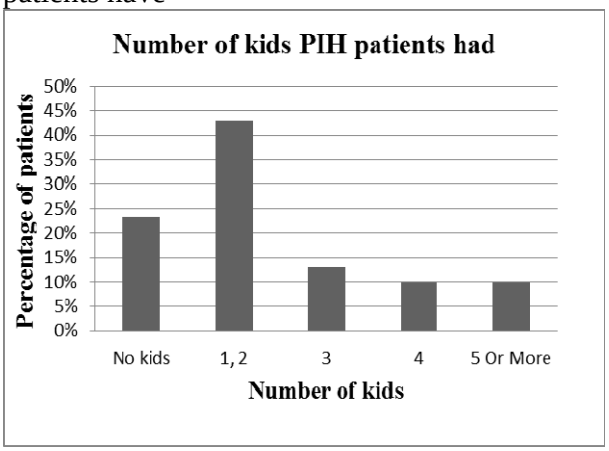


FIGURE 4 Graph showing time between present and previous pregnancy

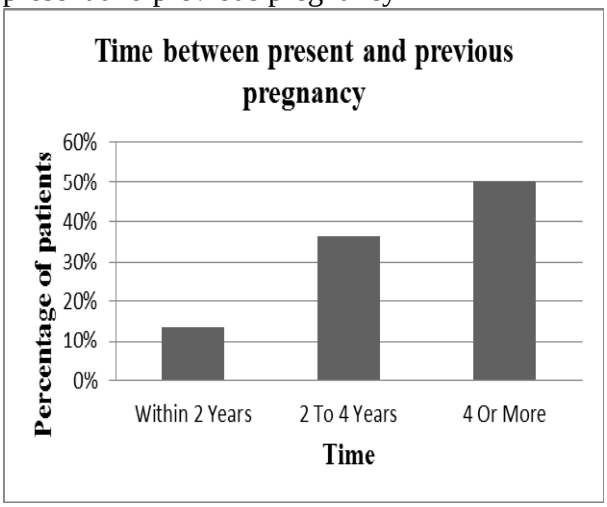


FIGURE 5 Graph showing onset of hypertension

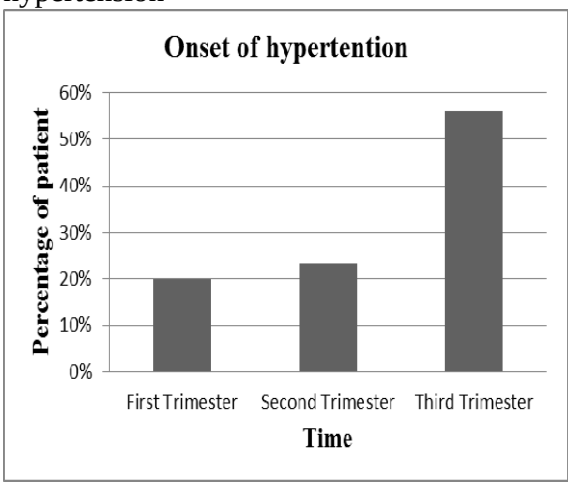


FIGURE 6 Graph showing mode of onset of hypertension

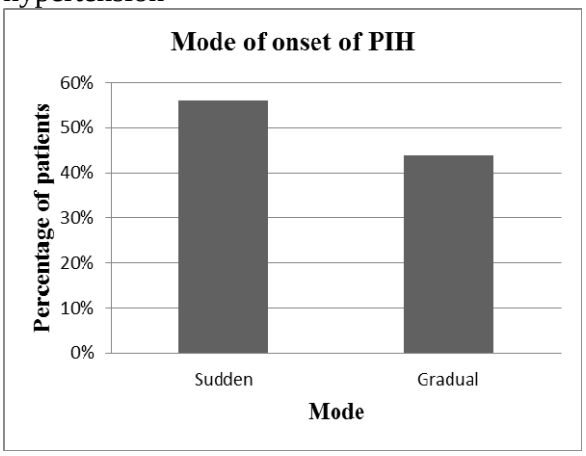


FIGURE 7 Graph showing Complications associated with PIH

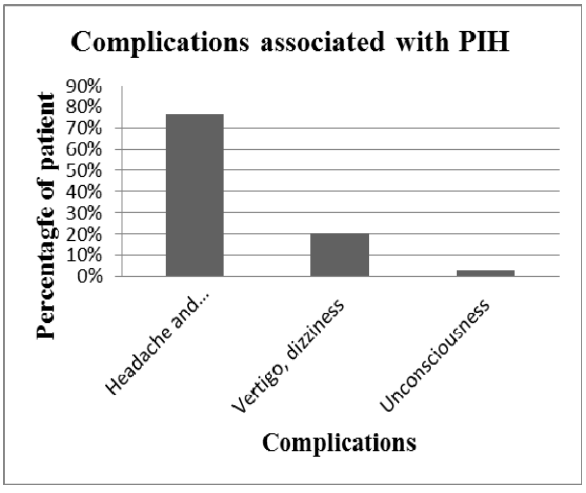


FIGURE 8 Graph showing type of Dietary habits

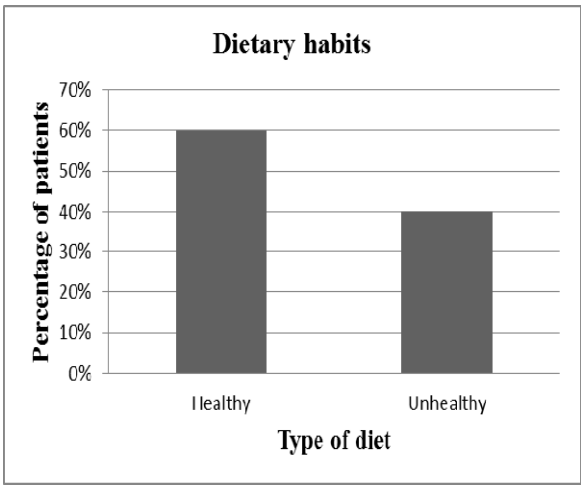


FIGURE 9 Graph showing house remedy used

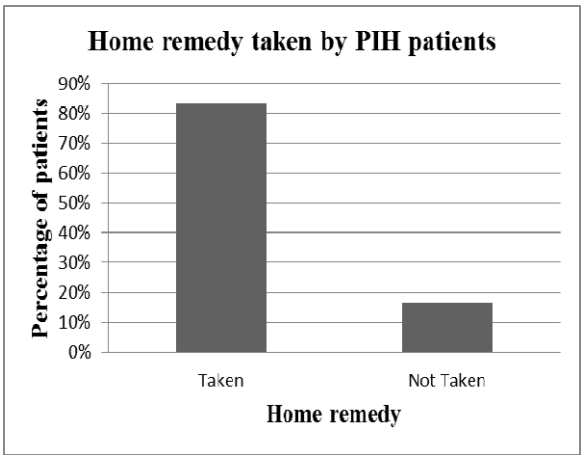
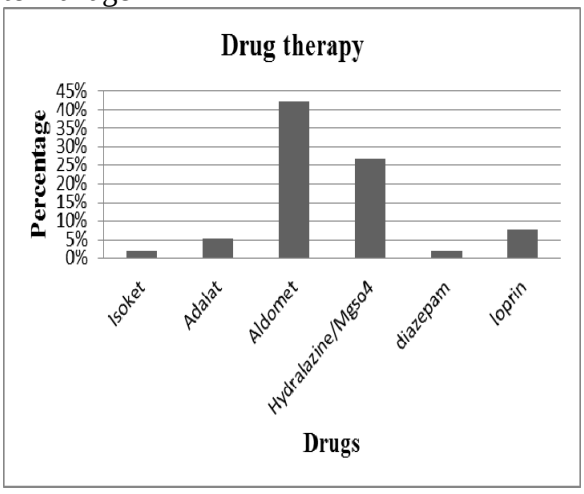


FIGURE 10 Graph showing medication given to manage PIH



DISCUSSION:

Pregnancy induced hypertension (PIH) is a condition that typically starts after the 20th week of pregnancy of high blood pressure during pregnancy. The blood pressure goes up, patient retains water, and protein is found in her urine. It is also called toxemia or preeclampsia. Preeclampsia affects the placenta, and it can affect the mother's kidney, liver, and brain. When preeclampsia causes seizures, the condition is known as eclampsia-the second leading cause of maternal death in the U.S. Preeclampsia is also a leading cause of fetal complications, which include low birth weight, premature birth, and stillbirth. The exact cause of PIH is unknown.

During my project I went to Sir Ganga Ram Hospital and Lady Wellingdon Hospital. The patients that I observed, 50% were between the ages 20 to 29, 43.3% were above 30 years of age and 6.6% were below 20 years of age. This shows the disease is common in older age. 75% belong to poor background while 25% came from rich family. The patients that arrived for treatment there, 56% of them were from Lahore and 44% were from out station. 100% of patients reported that they did never face any irregularity in their menstrual cycle. 70% were married for more than 5 years, 13% for 2 to 4 years and 12% for less than 2 years.

43% patients had 1 and 2 kids.23.3% did not have any kid at all while 10% had more than 5 kids. Same percentage was that of patients having 3, 4 kids.50% patients were expecting after more than 4 years. 96% patients having single foetus.

The onset of hypertension was 3rd trimester in 56% patients.23.3% patients reported PIH in 2nd trimester and 20% in 1st trimester. 56% patient told that there was sudden onset of high blood pressure and 44% said that the onset was gradual. Hypertension persisted in 56.6% patients and cured in 44% patients. Out of 30 patients 60% followed healthy diet and 63.3% took house remedy.

The drugs given to treat PIH included Isoket, Aldomet, Adalat, Mgso4, Hydralazine, And Loprin.

Smoking has significant negative impact on different fields of female sexual and reproductive life, like menstrual cycle, fertility, gynecological cancers and early menopause. Smoking during pregnancy is an important cause of ill health for both mother and foetus-it increases risk of placental complications, pregnancy induced hypertension, reduced fetal growth and perinatal death. Many of adverse effects of smoking is at least partially reversible after stopping smoking, so large public information campaigns can be useful for increasing women awareness of smoking hazards. Gynecologist, as a first contact specialist, has a responsibility to provide accurate information on the risks smoking poses both to the health of the smoker and to give clear, firm advice to stop smoking and offer suitable support. [9]

CONCLUSION:

There are problems that may develop as a result of PIH. Placental abruption (premature detachment of the placenta from the uterus) may occur in some pregnancies. PIH can also lead to fetal problems including intrauterine growth restriction (poor fetal growth) and stillbirth. If untreated, severe PIH may cause dangerous seizures and even death in the mother and fetus. Because of these risks, it may be necessary for the baby to be delivered early, before 37 weeks gestation. Treatment depends on how close the patient is to her due date. If she is close to her due date, and the baby is developed enough, the health care provider will probably want to deliver the baby as soon as possible. The goal of treatment is to prevent the condition from becoming worse and to prevent it from causing other complications. There is a need for pharmacist intervention in the management of pregnancy induced hypertension patients and to educate the pregnant mothers about the importance of healthy and complete nutrition during the pregnancy.

RECOMMENDATIONS:

Hypertension is a common and potentially serious complication of human pregnancy. It

can be a marker of underlying maternal disease processes aggravated by pregnancy, or it can be directly related to the pregnancy (pre-eclampsia). It is associated with increased risks of fetal growth retardation and, if severe, can cause both maternal and fetal problems. The risks to both mother and neonate can be reduced by appropriate supervision and therapy. Close monitoring of maternal and fetal welfare will help to determine the optimum time for delivery. Maternal hypertension should be controlled with agents considered to be well tolerated in pregnancy. Following the index pregnancy, all patients with early and/or severe hypertension should be investigated for an underlying cause. Provided that there is clinical resolution of acute pregnancy-related hypertension, investigations are usually postponed until at least 3 months following delivery. [10]

Calcium supplementation appears to approximately halve the risk of pre-eclampsia, to reduce the risk of preterm birth and to reduce the rare occurrence of the composite outcome 'death or serious morbidity'. There were no other clear benefits, or harms. [11]

The supplementation with 1,5 g of calcium per day appears effective as well in the prevention of PE, especially in the malnourished and young patents. Insufficient data is currently available to recommend antioxidant supplementation. Low molecular weight heparin is potentially beneficial in the prevention of PE, however its efficacy remains to be demonstrated and indications determined. Nitric oxide (NO) or NO releasers are not effective and can cause headaches. Diuretics reduce the birth weight without improving the incidence of PE. [12]

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