CODEN [USA]: IAJPBB ISSN: 2349-7750

INDO AMERICAN JOURNAL OF
PHARMACEUTICAL SCIENCES
http://doi.org/10.5281/zenodo.3270871

Available online at: http://www.iajps.com Research Article

# INCIDENCE OF PIH IN WOMEN PRESENTING TO GYNAE AND OBS DEPT OF SHL

**[1]Umme Farwa, [2]Dr. Zafar Ullah Khan, [3] Dr. Sonia Irshad, [4]Ammad Javaid Chaudhary**

[1]CMH Lahore Medical and Dental College, Lahore
[2]Bolan Medical College Quetta Balochistan
[3]WMO, BHU 23/SP, Guru Chak, Pakpattan Sharif
[4]House Officer, Mayo Hospital Lahore

**Article Received:** May 2019 **Accepted:** June 2019 **Published:** July 2019

**Abstract:**

***OBJECTIVE:*** *The main purpose to conduct this study is to investigate about the magnitude of Pregnancy Induced Hypertension (PIH) in women who come to Gynaecology OPD of Services Hospital, Lahore.*

*This study helps us to find out about the associated risk factors and contributing factors in induction of hypertension during pregnancy. Another purpose of study is dissemination of findings to policy makers and health planners leading to women health planning and implementation for better health for mothers and children and avoiding as well as preventing maternal mortality and morbidity due to PIH.*

***DESIGN*** *It was a cross-sectional descriptive study to determine the number of cases of hypertension among pregnant women*

***PLACE*** *The study was carried out in Gynaecology and Obstetrics outdoor of Services Hospital Lahore, a teaching hospital with a bed strength of 1096.*

***MATERIALS AND METHODS:*** *Study population consisted of all the pregnant women between the age of 15-45 years visiting antenatal check up in gynae and obs outdoor at Services Hospital Lahore. Sampling unit consists of a pregnant female of age 15-45 years visiting for antenatal outdoor for routine antenatal care. Non-probability, quota, convenience sampling technique was used to collect the required number of samples. 137 pregnant female of age 15-45 years were selected. To collect the data regarding the pregnant females, a semi-structured questionnaire was designed. The questionnaire used was pre-tested and necessary changes were made. The interviewing of the pregnant females was conducted at the outdoor with the help of auxiliary staff of antenatal clinic.Data entry sheet was prepared and all the responses were entered in the sheet and then data was transferred to master sheet and final analysis was performed manually with the help of scientific calculator (CASIO fx-82MS).*

***RESULTS:*** *About 6% of the females were having confirmed hypertension during pregnancy which is very close to the international quoted figure of hypertension during pregnancy.*

***CONCLUSION/RECOMMENDATIONS:*** *There is immense need to establish ante-natal services through out the country especially in the backward areas. There is also dire need to develop health education campaign for early warning/danger signs during pregnancy.*

**Corresponding author:**
**Umme Farwa,**
*CMH Lahore Medical and Dental College, Lahore*

QR code

*Please cite this article in press Umme Farwa et al.,* ***Incidence Of PIH In Women Presenting To Gynae And OBS Dept Of SHL.,*** *Indo Am. J. P. Sci, 2019; 07[07].*

## INTRODUCTION:

**Pregnancy Induced Hypertension (PIH)** is defined as a rise in the blood pressure above 140/90 mm Hg on two or more occasions, at least 6hours apart. It occurs in the second half of pregnancy (usually after 20 weeks of gestation) in a woman who previously had normal blood pressure. There are usually no other associated symptoms.

Incidence of eclampsia in developing nations varies widely ranging from 1 case per 100 pregnancies to 1 case per 1700 pregnancies.

Approximately 50,000 women worldwide are estimated to die annually because of eclampsia. The reported maternal mortality rate ranges from 1-20%.[1]

High blood pressure associated with pregnancy can be a serious problem. While most pregnant women who have, or develop, high blood pressure during pregnancy go onto complete natural birth with no serious problem, the condition can still be dangerous.

About 6% of women with no history of high blood pressure will spontaneously develop high blood pressure during pregnancy.

PIH in and of itself has no deleterious effect on pregnancy, and the blood pressure returns to normal levels by 6weeks after delivery.

The important aspect of care in PIH is close monitoring of the blood pressure levels and the development of any other symptoms they may indicate the onset of pre-eclampsia.

Medications to lower blood pressure in PIH are usually not required and are generally avoided due to risk of harm to the developing fetus by many anti-hypertensive preparations. [2]

In the light of above mentioned facts, it is pertinent to study the magnitude of the problem during pregnancy; therefore this small scale study was conducted.

## HISTORICAL REVIEW:

The existence of complications and deaths after and during pregnancy has been recorded since the beginning of civilization.

Historically, it didn't take long for folks to realize that there were certain conditions unique to pregnancy. What got their attention was death which seemed to be an accepted hazard of trying to reproduce. There were two main mortal conditions associated with child-birth related death. One was hemorrhage. The other was something that was called toxemia, described as far back as four thousand years ago..

Toxemia, so called because it was supposed that toxins of some sort, bad "humors", caused this condition and was associated with seizures, swelling and death anywhere from the beginning of the third trimester to a month or so beyond delivery. As science gloated over discoveries like blood types and blood pressure differences, the voodoo term "toxemia" was renamed "pre-eclampsia", "eclampsia" a condition of seizures that were the result of the worst type of swelling one could have--brain swelling!
But "pre-eclampsia" was a bit downer term, because implied within was the observation, "you haven't had your seizure…yet!"

Next, the label was corrected to "Pregnancy Induced Hypertension" (PIH), to associate it with the uniqueness of pregnancy. But this term singled out only one aspect, the elevated blood pressure. This was a faulty term, because it was possible to have PIH and its sinister big sister, HELLP syndrome, without even having an elevation in blood pressure. Today the term du jour is **Gestational Hypertension**… still not perfect but we all know what we're talking about here.[3]

## PREGNANCY INDUCED HYPERTENSION AS A GLOBAL PROBLEM

Pregnancy Induced Hypertension is an established cause of mortality as well as morbidity in developed and under-developed countries.

FREQUENCY:

- **In the US:** the incidence of pre-eclampsia is about 5% of pregnancies; the range is 5-10%. The incidence of eclampsia is considered to be about 5-7 cases per 10,000 deliveries.
- **Internationally:** The incidence of pre-eclampsia and eclampsia in the developed countries of North America and Europe is similar to those of the United States. On the other hand, incidence of eclampsia in developing nations varies widely, ranging from 1 case per 100 pregnancies to 1 case per 1700 pregnancies.

MORTALITY/MORBIDITY:

- Although eclampsia is a rare complication of pregnancy, Approximately 50,000 women worldwide are estimated to die annually because of eclampsia.
- The reported maternal mortality rate ranges from 1-20%.

- The perinatal mortality rate of neonates born to eclamptic mothers ranges from 1.3-3%.[4]

**3. PREGNANCY INDUCED HYPERTENSION AS A NATIONAL PROBLEM**

MORTALITY PATTERN:

The major causes of maternal deaths were the same in the hospitals throughout the country and in the community, though in different proportions. In the SOGP countrywide hospital study 18.6% maternal deaths were due to hypertensive diseases. There was a difference in proportions province and city-wise.

- In Sindh, proportion of maternal mortality is 23.5% (except Karachi).
- In the MIMS community survey of Karachi 20.6% deaths were due to eclampsia.
- In Balochistan and Hazara divisions (NWFP) 9.9% and 7.9% deaths were due to hypertensive disorders, respectively.
- In Punjab, about 25% maternal deaths were due to eclampsia.[5]

MORBIDITY PATTERN:

Obstetric morbidity comprises the largest component of reproductive morbidity. It encompasses a large number of transient and permanently disabling conditions.

PIH did not constitute major portion of maternal morbidity in Pakistan.

In a one-year hospital study, immediate morbidity was seen in 4.4% of total deliveries from which PIH constitutes only about 2% of cases.[6]

**DEFINITION OF PREGNANCY INDUCED HYPERTENSION (PIH)**

**DEFINITION**:

PREGNANCY INDUCED HYPERTENSION (PIH) is defined as a rise in the blood pressure above 140/90 mm Hg on two or more occasions, at least 6hours apart. It occurs in the second half of pregnancy (usually after 20 weeks of gestation) in a woman who previously had normal blood pressure. It also known as GESTATIONAL HYPERTENSION

**CLASSIFICATION:**

Hypertensive states of pregnancy include:

1. PRE-ECLAMPSIA
2. ECLAMPSIA
3. CHRONIC HYPERTENSION

**1. PRE-ECLAMPSIA:**

It is the non-convulsive form of pregnancy induced hypertension and may be mild or severe. Pre-eclampsia is hypertension associated with proteinuria and edema, occurring primarily in nulliparous after the 20th gestational week and most frequently near term.

**2. ECLAMPSIA:**

It is a convulsive form of PIH. It is the occurrence of seizures that cannot be attributed to other causes in the pre-eclamptic patients.

**3. CHRONIC HYPERTENSION:**

It is defined as hypertension that is present before conception, before 20 weeks of gestation or that persists for more than 6 week post-partum.

**ETIOLOGY**

CAUSES:

The exact cause of pregnancy induced hypertension is unknown, but geophysical, ethnic, racial, nutritional, immunologic and familial factors and pre-existing vascular diseases appear to play a role in its development.

1. **CAUSES AND INCIDENCE OF PRE-ECLAMPSIA:**

Pre-eclampsia occurs in about 6% of the general population, the incidence varies with geographic locality. Predisposing factors are Nulliparity, black race, maternal age below 20 or over 35 years, low socio-economic status, multiple gestation, hydatidiform mole, polyhydramnios, non immune fetal hydrops, twins and obesity, diabetes, chronic hyper tension and underlying renal disease.[7]

2. **CAUSES AND INCIDENCE OF ECLAMPSIA**:

Eclampsia occurs in 0.2-0.5% of all deliveries, with occurrence being influenced by the same factors as in pre-eclampsia. In rare instances, Eclampsia develops before 20 weeks of gestation. About 75% of eclampsia seizures occur before delivery. About 50% of post partum eclamptic seizures occur in the first 48 hrs of the delivery, but they may occur as late as 6 weeks post partum.

3. **CAUSES AND INCIDENCE OF CHRONIC HYPERTENSION:**

The incidence of chronic hypertension varies among different population, ranging from 0.5-4% and averaging 2.5%. Chronic hypertension in pregnancy is usually idiopathic (80%) or due to renal disease (20%), though these figures may reflect insufficient investigations. A number of renal diseases may be positive, the most common being chronic glomerulonephritis, interstitial nephritis, diabetic glomerulosclerosis, IgA nephropathy and renal artety stenosis.

**RISK FACTORS:**

The following may increase the risk of developing PIH:

- A first-time mom
- Women whose sisters and mothers had PIH
- Women carrying multiple babies; teenage mothers; and women older than age 40
- Women who had high blood pressure or kidney disease prior to pregnancy
- Women who have developed high B.P. during a previous pregnancy.
- Women who are significantly over weight before becoming pregnant
- Women who are either younger than 20yrs or older than 40yrs.

**RACE**:

- Pre-eclampsia/eclampsia syndrome is more common in blacks than in Hispanics.
- Hispanic women are more likely to be affected by this syndrome than white women.
- Higher incidences of the syndrome in the developing world may be related to racial difference, but effects of other environmental and social factors cannot be underestimated.

**AGE:** Pre-eclampsia/eclampsia is more likely to occur in women at either extreme of reproductive life.

- A young nulliparous woman is more likely to experience the condition.
- Similarly, a multiparous woman older than 35 years in more likely to be affected.
- Other risk factors include multiple pregnancies, hydatidiform mole, and extra uterine pregnancy.[8]

**PATHOPHYSIOLOGY OF PIH**

Pre-eclampsia/eclampsia is a multisystem disorder. The cardiovascular system is routinely involved, with hemodynamic changes resulting from severe hypertension that may lead to cardiac failure or pulmonary edema. The kidneys also are commonly affected, with resultant proteinuria and decreased glomerular filtration rate, which may lead to acute tubular necrosis and renal failure in severe cases. Hematologic changes related to the consumption of platelets and clotting factors resulting in intravascular coagulation may occur, at times associated with evidence of intravascular erythrocyte destruction. Abnormal liver function test results with elevation of liver enzymes can be observed commonly, but in rare instances, spontaneous hepatic rupture may ensue. Involvement of the brain may cause convulsions, coma, alerted mental state, cortical blindness and other manifestations of focal brain dysfunction.

The exact etiology of pre-eclampsia/eclampsia is not known. Current thinking is that the problem starts with the placenta. Fetal or uterine participation apparently are not crucial because this condition is identified in abdominal pregnancy and hydatiform mole. In women with toxemia, the trophoblastic implantation is abnormal, resulting in lower placental perfusion. This in turn induces endothelial cell injury through unknown mediators. This leads to widespread vasospasm, and this vasospasm is considered to be central to the condition. Vasospasm leads to increased resistance to blood flow with resultant hypertension. This may also induce further endothelial damage and leakage of platelets and fibrinogen into the subendothelial space. These changes ultimately lead to surrounding tissue hypoxia, resulting in necrosis or hemorrhage in multiple end organs.

Usually pregnant women develop marked reduction in peripheral vascular resistance. They also develop refractoriness to infused vasopressors, such as angiotensinII. These hemodynamic changes are reversed in pre-eclampsia/eclampsia.

This may be due to decreased vascular responsiveness mediated, in part, by vascular endothelial synthesis of prostaglandins or similar substances. Decreased production of prostacyclin and increased synthesis of thromboxane-$A_2$ in PIH may result in vasoconstriction. In addition, decreased production or release of nitric oxide, a potent vasodilator, may contribute to the development of or aggravate the preeclampsia/eclampsia syndrome. In a prospective observational study, amniotic fluid concentration of endothelin was found to be elevated by the second trimester in women who later developed pre-eclampsia.[9]

**SIGNS AND SYMPTOMS:**

MILD PRE-ECLAMPSIA generally produces the following clinical effects: hypertension, proteinuria (less than 5g/24 hours), generalized edema, and sudden weight gain of more than 3 lb (1.4kg) per week during the second trimester or more than 1 lb (0.5kg) a week during the third trimester.

SEVERE PRE-ECLAMPSIA is marked by increased hypertension and proteinuria, eventually leading to the development of oliguria. Hemolysis, elevated liver enzymes, and low platelets (the HELLP syndrome) is a severe variant. Other symptoms that may indicate worsening pre-eclampsia include blurred vision due to retinal arteriolar spasms,

epigastric pain or heartburn, and severe frontal headache.
IN ECLAMPSIA, all the clinical manifestations of pre-eclampsia are magnified and are associated with seizures and, possibly, coma, premature labor, stillbirth, renal failure, and hepatic damage.

CHRONIC HYPERTENSION is the persistence of hypertension after the puerperium.[10]

**HOW DOES PIH AFFECT THE BABY?**

Pregnancy induced hypertension (PIH) can prevent the placenta from getting enough blood. If the placenta doesn't get enough blood, your baby gets less oxygen and food. This can result in low birth weight.
Most women still can deliver a healthy baby if PIH is detected early and treated with regular prenatal care.[11]

**COMPLICATIONS:**
PRE-ECLAMPSIA:
Complications of pre-eclampsia are early delivery, fetal complication due to pre-maturity, still births, chronic uteroplacental insufficiency, Intra Uterine Growth Retardation (IUGR) and oligohydramnios.

ECLAMPSIA:
Complications of eclampsia are seizures induced complications. They are tongue biting, broken bones, head trauma, aspiration pneumonia, pulmonary edema and retinal detachment.

CHRONIC HYPERTENSION:
Complications of chronic hypertensions are:

i. In mother: Disseminated intravascular coagulation (DIC), acute tubular necrosis, renal cortical necrosis.
ii. In fetus: Pre-maturity, Intra Uterine Growth Retardation (IUGR), still births, chronic intra uterine asphyxia. [12]

**DIAGNOSIS:**

The following findings suggest PRE-ECLAMPSIA:

- Elevated blood pressure readings: 140 systolic, measured on two occasions, 6 hours apart; 90 diastolic, measured on two occasions, 6 hours apart
- PROTEINURA: at least 300 mg/24hours.

The following findings suggest SEVERE PRE-ECLAMPSIA:

- HIGHER BLOOD PRESSURE READINGS: 160/110 mm Hg or higher on two occasions, 6 hours apart, on bed rest
- INCREASED PROTEINURIA: 5 g/24 hours or more
- PRESENCE OF PULMONARY EDEMA
- ULTRASOUND: may reveal oligohydraminos
- OLIGURIA: urine output less than or equal to 400 ml/24 hours.

Seizures strongly suggest ECLAMPSIA. Rarely ophthalmoscopic examination may reveal vascular spasm, papilledema, retinal edema or detachment, and arteriovenous nicking or hemorrhage.

REAL-TIME ULTRASONOGRAPHY, stress and non-stress tests, and biophysical profiles evaluate fetal status. In the STRESS TEST, oxytocin stimulates contractions; fetal heart tones are then monitored electronically during periods of fetal activity, without oxytocin stimulation. ELECTRONIC MONITORING reveals stable or increased fetal heart tones during periods of fetal activity.

Ultrasonography aids evaluation of fetal health by assessing fetal breathing movements, gross body movements, fetal tone, receive fetal heart rate, and qualitative amniotic fluid volume.[13]

**MANAGEMENT AND TREATMENT**

**IN CASE OF MILD HYPERTENSION**

- Rest, lying on your left side to take the weight of the baby off your major vessels.
- Increase prenatal checkups.
- Consume less salt.
- Drink 8 glasses of water a day.

**IN CASE OF SEVERE HYPERTENSION:**

Therapy for pre-eclampsia is designed to halt the disorder's progress—specifically, the early effects of eclampsia, such as seizures, residual hypertension, and renal shutdown—and to ensure fetal survival. Some physicians advocate the prompt induction of labor, especially if the patient is near term; others follow a more conservative approach. Therapy may include complete bed rest to increase placental perfusion, reduce hypertension, and evaluate response to therapy. Antihypertensive therapy doesn't alter the potential for developing eclampsia. Diuretics aren't appropriate during pregnancy.

If the patient's blood pressure fails to respond to bed rest and sedation and persistently rises above 160/110 mm Hg, or if central nervous system irritability increases, **magnesium sulfate** may produce general sedation, promote diuresis, and prevent seizures**. cesarean birth** or **oxytocin induction** may be required to terminate the pregnancy.

EMERGENCY TREATMENT OF ECLAMPTIC SEIZURES CONSISTS OF IMMEDIATE ADMINISTRATION OF MANESIUM SULFATE (I.V.DRIP), OXYGEN ADMINISTRATION, and ELECTRONIC FETAL MONITORING. After the seizures subside and the patient's condition stabilizes, delivery should proceed with induction of labor or cesarean birth, depending upon the circumstances.

Adequate nutrition, good prenatal care, and control of pre-existing hypertension during pregnancy decrease the incidence and severity of pre-eclampsia. Early recognition and prompt treatment of pre-eclampsia can prevent progression to eclampsia.[14]

**PREVENTION**

Currently, there is no sure way to prevent hypertension. Some contributing factors to high blood pressure can be controlled and some can't. Follow your doctor's instruction about diet and exercise.

- Use little or no added salt in your meals.
- Drink 6-8 glasses of water a day.
- Don't eat a lot of fried foods and junk food.
- Get enough rest
- Exercise regularly
- Elevate your feet several times during the day
- Avoid drinking alcohol
- Avoid beverages containing caffeine
- Your doctor may suggest you take prescribed medicine and additional supplements.[15]

**OBJECTIVES OF STUDY**

**OBJECTIVES:**

The main purpose to conduct this study is to investigate about the magnitude of Pregnancy Induced Hypertension (PIH) in women who come to Gynae OPD of Services Hospital, Lahore.

This study helps us to find out about the associated risk factors and contributing factors in induction of hypertension during pregnancy.

Another purpose of study is dissemination of findings to policy makers and health planners leading to women health planning and implementation for better health for mothers and children and avoiding as well as prevention of maternal mortality and morbidity due to PIH.

## METHODOLGY:

STUDY UNIVERSE:

The study was carried out in gynae and obs outdoor of Services Hospital Lahore, a teaching hospital with a bed strength of 1096.

STUDY DESIGN:

It was a cross-sectional descriptive study to determine the number of cases of hypertension among pregnant women.

STUDY POPULATION:

Study population consisted of all the pregnant women between the age of 15-45 years visiting antenatal check up in gynae and obs outdoor at Services Hospital Lahore.

SAMPLING UNIT:

Sampling unit consists of a pregnant female of age 15-45 years visiting for antenatal outdoor for routine antenatal care.

SAMPLING TECHNIQUE:

Non-probability, quota, convenience sampling technique was used to collect the required number of samples.

SAMPLING SIZE:

137 pregnant female of age 15-45 years were selected.

DATA COLLECTION:

To collect the data regarding the pregnant females, a semi-structured questionnaire was designed. The questionnaire used was pre-tested and necessary changes were made. The interviewing of the pregnant females was conducted at the outdoor with the help of auxiliary staff of antenatal clinic.

DATA ANALYSIS:

Data entry sheet was prepared and all the responses were entered in the sheet and then data was transferred to master sheet and final analysis was performed manually with the help of scientific calculator (CASIO fx-82MS).

## RESULTS:

**PREGNANT WOMEN'S BACKGROUND:**

Out of a total 137 pregnant women included in the study, as their ages are concerned, majority **54 (39.416%)** of the pregnant women were **20-24** years of age. **7 (5.109%)** were **15-19** years of age at the time of their first pregnancy, **45 (32.84%)** were **25-**

**29** years of age and **25 (18.248%)** belonged to **30-34** years of age group. According to their educational status **22, (16.058%)** pregnant women were illiterate and **115 (83.942%)** were literate. Out of **115** literate mothers **11 (8.029%)** pregnant women had education up to primary level, **17 (12.40%)** had education up to middle level, **46 (33.57%)** were up to matric level, **15 (10.94%)** were up to graduate level and **only 3 (2.18%)** pregnant women had education up to Masters level. Only **5** pregnant females were working outside the home and **132 (96.35%)** were house-wives.

**HUSBAND'S BACKGROUND:**
Among the husband's of pregnant women included in the study, **18 (13.139%)** were illiterate and **119 (86.8%)** were literate. Out of the **119** educated persons **13 (9.48%)** had middle level, **11 (8.02%)** had primary level, **24 (17.51%)** had intermediate level, **22 (16.05%)** had graduate level, and **only 7 (5.109%)** persons had Masters level education. Majority of the husbands of pregnant women included in the study were Businessmen **43 (31.1%)** while **27 (19.70%)** of them were government employs, **33 (24.08%)** of them were Private employees, **28 (20.43%)** were laborers.

**TOTAL MONTHLY INCOME OF FAMILIES**
The total family income per month showed that **49 (35.766%)** families earned less than 5000/month, **66 (48.175%)** families earned 5000-1000/month and **22 (16.058%)** families earned more than 1000/month.

**PREVIOUS OBSTETRICAL HISTORY OF PREGNANT WOMEN**
Among the 137 pregnant women interviewed, **38 (27.73%)** were pregnant for the first time, **42 (30.65%)** had second pregnancy, **20 (14.59%)** had three number of total pregnancies, **16 (11.67%)** were pregnant fourth time, **11 (8.029%)** were having pregnancy for fifth time, **5 (3.649%)** were pregnant sixth time and **5 (3.649%)** were pregnant for seventh time pregnant. **43 (31.386%)** pregnant women had no child alive, **39 (28.467%)** had **1** child alive, **21 (15.32%)** had **2** children, **17 (12.40%)** had **3** children, **13 (9.489%)** had **4** children and **4 (2.919%)** had **5** children alive. **6** pregnant women faced **complications** during the previous pregnancy.

**PERSONAL HISTORY OF PREGNANT WOMEN:**
Among the 137 pregnant women interviewed, **136 (99.27%)** pregnant women were non-smokers, **137 (all)** of them had no history of addiction and only **4 (27.98%)** of them exercised regularly.

**MEDICAL/SURGICAL HISTORY OF PREGNANT WOMEN** Among 137 pregnant women interviewed, 15 **(10.94%)** of them had previous medical history of hypertension while 8 (5.839%) had Pregnancy Induced Hypertension, **50 (36.49%)** had history of Giddiness/Dizziness, **3 (2.189%)** had history of heart disease, **2 (1.459%)** had history of diabetes, while **8 (5.839%)** had history of various renal problems like urinary tract infection etc.

Among 137 pregnant women interviewed, **14 (10.218%)** had previous surgical history of some surgical procedure and **13 (9.489%)** had history of Cesarean section.

**FAMILY HISTORY OF PREGNANT WOMEN:**
Among the 137 pregnant women interviewed, **72 (52.55%)** had family history of hypertension, **46 (33.576%)** of family history of Diabetes, **17 (12.408%) with** Multiple gestations and **1 (0.729%) with history of** heart diseases.

**DURATION OF PREGNANCY OF PREGNANT WOMEN:**
Among the 137 pregnant women interviewed, **22 (16.058%)** had first trimester of pregnancy, **43 (31.386%)** had second trimester of pregnancy and **72 (52.554%)** had third trimester of pregnancy.

**GENERAL PHYSICAL EXAMINATION OF PREGNANT WOMEN:**
**51 (37.23%)** women had pulse rate between **70-74/min**, **31 (22.62%)** had between **75-79/min, 24 (17.52%)** had between **80-84/min** while others had pulse rate above **85/min.**

Among the 137 pregnant women interviewed, **92 (67.15%)** of them have respiratory rate of **15-19/min** and **28 (20.5%)** of them have respiratory rate of **20-24/min.**

**13 (9.5%)** of 137 pregnant women had weight between 45-49 kg, **81 (59.1%)** were between 50-65kg, **10 (7.29%)** were between 66-70 kg and **33 (24%)** of them were above 70 kg.

**24 (17.518%)** of pregnant women had edema, **45 (32.84%)** had **pallor** while **2 (1.459%)** had H/O thyroidectomy and **6 (4.379%)** had H/O jaundice.

SYSTOLIC BLOOD PRESSURE:
**28 (20.437%)** of the pregnant women had 101-110mm Hg, while **47 (34.306%)** were between 111-120mm Hg and **8 (5.8%) had blood pressure greater than 140mm Hg.**

**DIASTOLIC BLOOD PRESSURE:**
**46 (33.576%)** 60-70 mm Hg while **49 (35.766%)** had 71-80 mm Hg and **9 (6.569%) of them were greater than 90 mm Hg.**

## DISCUSSION

As apparent from the study that most of the females almost 54% belong to the very young age group and similarly most of the females about 83% belonged to the same age group at the tome of their first pregnancy.

This is according to old traditions and customs of early marriage but at the same time this early marriage and early conception leads to lot of complication connected with the pregnancy and one of the major cause of increased mortality as well as morbidity. Husbands of about 31% females are running their own business and are earning around Rs. 10,000 per month. This may be due to the fact that Services Hospital caters well-polished area of Lahore.

It is encouraging that about 80% of the pregnant females are literate with varying levels of education. This is one of the important factor in knowing their problems during pregnancy and also having better understanding of various pregnancy induced problems presented over various forms like mass-media, news-papers, internet etc. this high literacy rate may be one of the reasons for early seeking of medical advice during pregnancy.

It is a global fact that the risk of PIH increases after every successive pregnancy. About 40% of the pregnant females are having more than 2 children so they are quite at risk for the manifestation of PIH and these females need proper and regular ante-natal visits which are of paramount importance for the early detection of PIH and its proper rectification.

It is very encouraging that only one female in the study admitted smoking as we know that smoking is a modifiable risk factor for the prevention of hypertension and low birth weight baby. Still there is grave need to launch health education programs against smoking. Similarly, as it is well-known factor that exercise is the part and parcel of ante-natal care, it is very distressing that only 4 females claimed exercise during pregnancy and it needs a lot of emphasis about exercise.

About 375 of females complaint of dizziness and perhaps this was the only complaint which brought these females for seeking advice.

It is very unfortunate that about 52% of females were having history of hypertension in their families. This may indicate that perhaps there may be some familial/genetic predisposition to hypertension.

It is apparent from the study that about 52% of the females had hypertension during pregnancy according to the laid down criteria. These results can not be generalized because of the small sample size and because the patient visiting the hospital form particular strata and area.

## CONCLUSIONS AND RECOMMENDATIONS:

High blood pressure associated with pregnancy can be a serious problem. About 6% of the women may develop high blood pressure during pregnancy and this also contributes to increased peri-natal mortality rate of newborns born to mother with high blood pressure during pregnancy.

SOGP study conducted in Pakistan indicates that about 18.6% maternal deaths are due to hypertensive disease.

The study revealed that most of the pregnant females belonged to the young age group and similarly they had their first pregnancy at very early age. About 40% of the pregnant females were having more than 2 children and so were at a greater risk of developing hypertension with each successive pregnancy. The concept of doing exercise is very scanty during ante-natal period. About 52% of the females complained of hypertension in their family members which is very alarming. As a whole, it is apparent from the study that about 6% of the females were having confirmed hypertension during pregnancy which is very close to the international quoted figure of hypertension during pregnancy.

In the light of the above facts, following recommendations are made:

1. Regular ante-natal visits should be offered to every pregnant female to pick up early hypertensive cases and their management should be started at the earliest.
2. The domiciliary ante-natal services should be provided in cases of loss of contact.
3. The concept of exercise should be enlightened as it is one of the best way to primordial prevention.
4. The believes and customs about early marriages should be corrected as it is one of the established high risk factors.
5. The regular follow up of hypertensive patient should be done natally as well as post-natally.
6. The mass-media should emphasis the importance of risk factors associated with hypertension during pregnancy in a very simple way so that even illiterate mother can understand the associated hazards.

Table - I

Frequency distribution of pregnant females according to their age

| Age group ( Year ) | Frequency | Percentage ( % ) |
|---|---|---|
| 15 - 19 | 7 | 5.1095 |
| 20 - 24 | 54 | 39.4161 |
| 25 - 29 | 45 | 32.8467 |
| 30 - 34 | 25 | 18.2482 |
| 35 - 39 | 6 | 4.3796 |
| 40 + | | |
| Total | 137 | 100.0000 |

Table - II

Frequency distribution of pregnant females according to their age at 1st pregnancy

| Age group ( Year ) | Frequency | Percentage ( % ) |
|---|---|---|
| 15 - 19 | 30 | 21.8978 |
| 20 - 24 | 83 | 60.5839 |
| 25 - 29 | 24 | 17.5182 |
| Total | 137 | 100.0000 |

Table - III

Frequency distribution of pregnant females according to their occupation

| Age group ( Year ) | Frequency | Percentage ( % ) |
|---|---|---|
| House wife | 132 | 96.3504 |
| Social worker | 1 | 0.7299 |
| Business | 1 | 0.7299 |
| Teacher | 3 | 2.1898 |
| Total | 137 | 100.0000 |

Table - IV

Frequency distribution of husbands of pregnant females according to their occupation

| Occupation | Frequency | Percentage ( % ) |
|---|---|---|
| Labourer | 28 | 20.4380 |
| Private Employee | 33 | 24.0876 |
| Govt. Employee | 27 | 19.7080 |
| Businessman | 43 | 31.3869 |
| Driver | 6 | 4.3796 |
| Total | 137 | 100.0000 |

Table - V

Frequency distribution of pregnant females according to their education

| Education | Frequency | Percentage ( % ) |
|---|---|---|
| Illiterate | 22 | 16.0584 |
| Primary | 11 | 8.0292 |
| Middle | 17 | 12.4088 |
| Matric | 46 | 33.5766 |
| Intermediate | 23 | 16.7883 |
| Graduate | 15 | 10.9489 |
| Master | 3 | 2.1898 |
| Total | 137 | 100.0000 |

Table - VI

Frequency distribution of husbands of pregnant females according to their education

| Education | Frequency | Percentage ( % ) |
|---|---|---|
| Illiterate | 18 | 13.1387 |
| Primary | 11 | 8.0292 |
| Middle | 13 | 9.4891 |
| Matric | 42 | 30.6569 |
| Intermediate | 24 | 17.5182 |
| Graduate | 22 | 16.0584 |
| Master | 7 | 5.1095 |
| Total | 137 | 100.0000 |

Table - VII

Frequency distribution of families according to their total monthly income

| Total family Income | Frequency | Percentage ( % ) |
|---|---|---|
| <5,000 Rs | 49 | 35.7664 |
| 5,000 to 10,000 Rs | 66 | 48.1752 |
| >10,000 Rs | 22 | 16.0584 |
| Total | 137 | 100.0000 |

Table - VIII

Frequency distribution of pregnant females according to their total number of pregnancies

| Total number of Pregnancies | Frequency | Percentage ( % ) |
|---|---|---|
| 1 | 38 | 27.7372 |
| 2 | 42 | 30.6569 |
| 3 | 20 | 14.5985 |
| 4 | 16 | 11.6788 |
| 5 | 11 | 8.0292 |
| 6 | 5 | 3.6496 |
| 7 | 5 | 3.6496 |
| Total | 137 | 100.0000 |

Table - IX

Frequency distribution of pregnant females according to their alive children

| Number of alive Children | Frequency | Percentage ( % ) |
|---|---|---|
| 0 | 43 | 31.3869 |
| 1 | 38 | 27.7372 |
| 2 | 21 | 15.3285 |
| 3 | 17 | 12.4088 |
| 4 | 13 | 9.4891 |
| 5 | 4 | 2.9197 |
| 6 | 1 | 0.7299 |
| Total | 137 | 100.0000 |

Table – X
n=137

Frequency distribution of pregnant females according to complications during last pregnancy

| Total number of Pregnancies | Frequency | Percentage ( % ) |
|---|---|---|
| No Complication | 52 | 89.6552 |
| Septicemia | 1 | 1.7241 |
| Breech presentation | 1 | 1.7241 |
| Hypertension | 1 | 1.7241 |
| RDS | 1 | 1.7241 |
| IUD | 1 | 1.7241 |
| Absence of fetal movement | 1 | 1.7241 |
| Total | 58 | 100.0000 |

Table – XI
n=137

f pregnant females according to their personal history

| l | Frequency | Percentage ( % ) |
|---|---|---|
| | 1 | |
| | 4 | |
| | 5 | |

Table – XII
n=137

f pregnant females according to their medical / surgical history

| l / surgical story | Frequency | |
|---|---|---|
| | 15 | |
| | 50 | |
| | 3 | |
| | 3 | |
| | 8 | |
| | 11 | |
| | 14 | |
| | 13 | |
| | 117 | |

Table – XIII

Frequency distribution of pregnant females according to their family history

| Family History | Frequency | Percentage ( % ) |
|---|---|---|
| Hypertension | 72 | |
| Multiple gestations | 17 | |
| Diabetes | 46 | |
| Genetic disease | 1 | |
| Heart disease | 1 | |
| Total | 137 | |

Table - XIV

Frequency distribution of pregnant females according to duration of pregnancy

| Duration of Pregnancy | Frequency | Percentage ( % ) |
|---|---|---|
| 1st Trimester | 22 | |
| 2nd Trimester | 43 | |
| 3rd Trimester | 72 | |
| Total | 137 | |

Table - XV

Frequency distribution of pregnant females according to their pulse rate

| Pulse rate per min | Frequency | Percentage ( % ) |
|---|---|---|
| 60 - 69 | 13 | 9 |
| 70 - 74 | 53 | 38 |
| 75 - 79 | 31 | 22 |
| 80 - 84 | 24 | 17 |
| 85 89 | 5 | 3 |
| 90 - 94 | 7 | 5 |
| 95 - 99 | 2 | 1 |
| 100 - 104 | 2 | 1 |
| Total | 137 | 100 |

Table - XVI

Frequency distribution of pregnant females according to their respiratory rate

| Respiratory rate per min | Frequency | Percentage ( % ) |
|---|---|---|
| 10 – 14 | 17 | 12.4088 |
| 15 – 19 | 92 | 67.1533 |
| 20 – 24 | 28 | 20.4380 |
| Total | 137 | 100.0000 |

Table - XVII

Frequency distribution of pregnant female's according to their weight ( kgs )

| Weight in Kgs | Frequency | Percentage ( % ) |
|---|---|---|
| 45 - 49 | 13 | 9.4891 |
| 50 - 54 | 25 | 18.2482 |
| 55 - 59 | 30 | 21.8978 |
| 60 - 64 | 26 | 18.9781 |
| 65 - 69 | 10 | 7.2993 |
| 70 - 74 | 12 | 8.7591 |
| 75 - 79 | 14 | 10.2190 |
| 80 + | 7 | 5.1095 |
| Total | 137 | 100.0000 |

Table – XVIII
n=137

Frequency distribution of pregnant female's according to finding of their GPE

| GPE Finding | Frequency | Percentage ( % ) |
|---|---|---|
| Edema | 24 | 31.1688 |
| Pallor | 45 | 58.4416 |
| Thyroidectomy | 2 | 2.5974 |
| Jaundice | 6 | 7.7922 |
| Total | 77 | 100.0000 |

Table - XVIV- A

Frequency distribution of pregnant females according to their B.P in supine position (Systole)

| Blood pressure systolic (mm Hg) | Frequency | Percentage ( % ) |
|---|---|---|
| 81 – 90 | 2 | 1.4599 |
| 91 – 100 | 35 | 25.5474 |
| 101 – 110 | 28 | 20.4380 |
| 111 – 120 | 47 | 34.3066 |
| 121 – 130 | 13 | 9.4891 |
| 131 – 140 | 4 | 2.9197 |
| **141 – 150** | **6** | **4.3796** |
| **151 +** | **2** | **1.4599** |
| Total | 137 | 100.0000 |

Table - XVIV - B

Frequency distribution of pregnant females according to their B.P in supine position (Diastole)

| Blood pressure Diastolic (mm Hg) | Frequency | Percentage ( % ) |
|---|---|---|
| 60 – 70 | 46 | 33.5766 |
| 71 – 80 | 49 | 35.7664 |
| 81 – 90 | 33 | 24.0876 |
| **91 – 100** | **9** | **6.5693** |
| Total | 137 | 100.0000 |

**REFERENCES:**

Aashit K Shah.MD :preeclampsia and eclampsia
URL:www.emedicine.com/neuro/topic 323.htm accessed on 04/06/2007
URL:www.crashcards.com/medifocus/pregnancy induced hypertension GY015.htm accessed on 11/06/2007
URL: www.gynob.com/htiup.htm accessed on 11/06/2007

Aashit K Shah.MD :preeclampsia and eclampsia
URL:www.emedicine.com/neuro/topic 323.htm accessed on 04/06/2007

Shah KS,Illyas women health .in:Illyas-Shah-Ansari public health and communty medicine.7th ed.Karachi publishers;2006.p.4
URL:www.wrong diagnosis.com/handbook of disease-hypertension,pregnancy-induced.htm accessed on 11/06/07

URL:www.wrong diagnosis.com/handbook of disease-hypertension,pregnancy-induced.htm
accessed on 11/06/07
URL:www.americanpregnancy.org/pregnancy complication/pih/htm
accessed on 11/06/07
Aashit K Shah.MD :preeclampsia and eclampsia
URL:www.emedicine.com/neuro/topic 323.htm accessed on 04/06/2007

URL:www.wrong diagnosis.com/handbook of disease-hypertension,pregnancy-induced.htm
accessed on 11/06/07
URL:www.americanpregnancy.org/pregnancy complication/pih/htm
accessed on 11/06/07
URL:www.wrong diagnosis.com/handbook of disease-hypertension,pregnancy-induced.htm
accessed on 11/06/07
URL:www.wrong diagnosis.com/handbook of disease-hypertension,pregnancy-induced.htm
accessed on 11/06/07
URL:www.wrong diagnosis.com/handbook of disease-hypertension,pregnancy-induced.htm
accessed on 11/06/07
URL:www.americanpregnancy.org/pregnancy complication/pih/htm
accessed on 11/06/07