



## “Association of Liver Function Tests in Pregnancy Induced Hypertension”

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**ABSTRACT****Aim:-** The aim of our study was to find an association of liver function tests and pregnancy induced hypertension.**Study Design:-** A hospital based cross sectional study was conducted on patients attending the Outpatient department of Obstetrics & Gynecology of SGRR Medical College, Dehradun (U.K.), during a period of four months for October 2016 to January 2017.

A total number of 165 cases of reproductive age group (21-35 yrs) and having hypertension were selected randomly for this study. Exclusion criteria was age less than 21 yrs and more than 35 yrs. Women having multiple pregnancy and past history of diabetes, hypertension, renal disease, liver disease etc were excluded from the study.

**Methodology:-** Blood samples were collected and Serum Bilirubin, ALT, AST and Alkaline phosphatase were estimated by enzymatic methods on a fully automated machine 5600 of Orthodiagnosics.**Results:-** A slight rise in transaminases and a significant rise in the levels of Serum Alkaline phosphatase was observed. Results were analyzed using SPASS software & tabulated as Mean  $\pm$  SD  $\pm$  SE.**KEYWORDS :** Pre eclampsia, Pregnancy induced hypertension, liver function.

**Introduction:-** Pre eclampsia is defined as elevated Blood Pressure after 20 wks gestation ( $\geq 140$  mm of Hg systolic or  $\geq 90$  mm of Hg diastolic) and associated proteinuria and oedema<sup>(1)</sup>.

Hypertensive disorders of pregnancy are a group of common medical complications in pregnancy and also a major cause of maternal and neonatal mortality and morbidity<sup>(2)</sup>.

The prevalence of Hypertensive disorder of pregnancy is 8-10% of all pregnancies in the population world wide<sup>(3)</sup>. It is characterized by Hypertension, proteinuria and oedema. Hypertensive disorder of pregnancy can also trigger some severe forms of maternal complications such as cardiovascular and cerebrovascular disease, liver and kidney failure, placental abruption, DIC etc. Chronic hypertension accounts for a disproportionate amount of maternal and perinatal morbidity and mortality, mostly because of an increased risk of superimposed preeclampsia. There is an increased risk of prematurity, birth of infants who are small for their gestational age, IUD, placental abruption and Caesarean delivery. Complication rates are directly proportional to the severity & duration of elevated blood pressure.

Pathophysiology of preeclampsia is not clearly known. Maternal endothelial dysfunction mediated by excess placenta-derived soluble VEGF receptor I is emerging prominent component in disease pathogenesis<sup>(4)</sup>. Preeclampsia and Eclampsia occur during 2nd & 3rd trimester of pregnancy<sup>(5)</sup>. It affects functions of various organs and their metabolism. Hepatic damage is seen in severe preeclampsia and eclampsia<sup>(6)</sup>. This study was designed to see the changes in liver function in pregnancy induced hypertension.

**Materials & Methods:-** A hospital based cross sectional study was conducted on patients attending the OPD of Gynaecology & Obstetrics of SGRR Medical College, for a period of four months from October 2016 to January 2017.

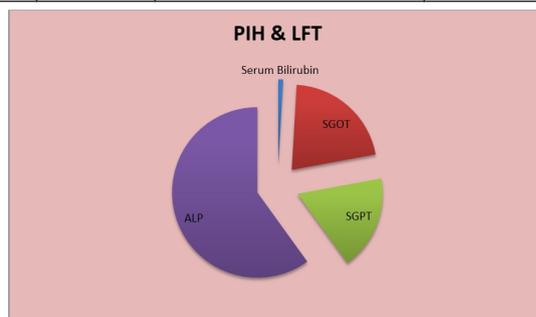
A total no. of 165 cases of reproductive age group (21-35 yrs) and having pregnancy with hypertension were selected randomly for this study.

Exclusion criteria was age less than 21 yrs & more than 35 yrs, women having multiple pregnancy, past history of Diabetes Mellitus, hypertension, renal disease, liver disease etc were excluded from the study.

Blood samples were collected and analyzed for Serum Bilirubin(7), ALT, AST(8) and ALP(9) by enzymatic methods on a fully automated analyzer 5600 of Orthodiagnosics.

**Results:-** A total no of 165 patients with PIH were selected randomly. We found a slight rise in transaminases and a significant rise in the levels of Serum Alkaline phosphatase. The results were analyzed using SPASS software & tabulated as (Mean  $\pm$  SD  $\pm$  SE) in Table 1 and depicted graphically in Fig. 1.

S.No.	LFT	Mean $\pm$ SD $\pm$ SE	Normal Range
1	Sr. Bilirubin	0.91 $\pm$ 0.48 $\pm$ 0.038 mg/dl	02-0.8 mg/dl
2.	SGOT	69.23 $\pm$ 34.28 $\pm$ 2.7 Units/lit	5-40 Units/l
3.	SGPT	58.72 $\pm$ 35.11 $\pm$ 2.7 Units/lit	5-35 Units/l
4.	ALP	196.93 $\pm$ 65.08 $\pm$ 5.05 Units/lit	90 Units/l



**Discussion:-** Preeclampsia and Eclampsia are pregnancy related complications with mortality rate less than 1%(10). Abnormal liver function occurs in 20-30% of pregnancies complicated by Preeclampsia and Eclampsia and are associated with poor maternal & foetal outcome<sup>(11,12)</sup>. Epidemiology of most pregnancy related liver disorder is either unknown or partially recorded<sup>(10)</sup>. Mechanism of raised liver enzymes is hypervascularization and vasoconstriction of liver leading to cell injury, alteration of membrane permeability and damage to hepatocytes<sup>(13,14)</sup>.

**Conclusion:-** High blood pressure can be dangerous for both the mother and foetus. Women with pre-existing or chronic high Blood pressure are more likely to have certain complications during pregnancy than those with normal blood pressure. So prior information of liver function in such patients may help in planning proper intervention to improve both maternal & foetal outcome.

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