

# Thrombocytopenia during Pregnancy at LUMHS, Hyderabad, Sind

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## ABSTRACT

**Objective:** To study the relationship between thrombocytopenia in pregnancy associated with various causes.

**Place and Duration of Study:** The Departments of Pathology and Obstetrics & Gynaecology, Liaquat University of Medical and Health Sciences, Hyderabad, Jamshoro from March 2011 to August 2011.

**Methods:** 1130 consecutive pregnant women were admitted during 6-month period.

**Results:** Incidence of thrombocytopenia in pregnancy was 13.11% (145/1130). The main causes of thrombocytopenia in pregnancy were gestational thrombocytopenia (GT) (55.5%), preeclampsia (21.2%), immune thrombocytopenic purpura (ITP) (16.8%), HELLP (Hemolysis, elevated liver enzymes and low platelet count) syndrome (13.45%) and HCV positive pregnant women were (8.02%). Women with thrombocytopenia were significantly older compared with patients without thrombocytopenia, and had higher rates of labor induction (OR=5.0, 95% CI=2.2-7.6,  $p<0.001$ ) and preterm deliveries (OR=3.5, 95% CI=1.9-6.5,  $p<0.001$ ). Thrombocytopenia was significantly associated with preterm delivery. Higher rates of placental abruption and PPH were found in pregnant women with thrombocytopenia (OR=90.2, 95% CI=1.5-33.2,  $p=0.001$ ).

**Conclusions:** Thrombocytopenia in pregnancy was associated with maternal and perinatal morbidity with the strongest association with preeclampsia, HCV positivity and HELLP syndrome. The lower the platelet count, the higher the risks for the fetus/new-born.

**Key words:** Thrombocytopenia, pregnancy.

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## INTRODUCTION

Thrombocytopenia is defined as a platelet count below  $150 \times 10^9/L$ . It is classified as mild platelet count of  $100-150 \times 10^9/L$ , moderate at  $50-100 \times 10^9/L$ , and severe with less than  $50 \times 10^9/L$ <sup>1,2</sup>. Thrombocytopenia occurs in approximately 10% of pregnant women and is caused by the various conditions. Gestational thrombocytopenia (GT) is considered the most prevalent cause of thrombocytopenia in pregnancy and accounts for about 75% of cases of thrombocytopenia during pregnancy. It is defined by a platelet count of not less than  $70 \times 10^9/L$ , especially during the third trimester, and the count returns to normal within 12 weeks of delivery<sup>3,4,5</sup>. The etiology is unknown, but is considered to be due to the relative hemodilution in pregnancy, and destruction of platelets in the placenta<sup>14,15</sup>. GT is considered a minor form of thrombocytopenia in pregnant women, with no risk of hemorrhage to the mother. Immune thrombocytopenic purpura (ITP) is caused by platelet

destruction in the reticuloendothelial system, due to platelet auto-antibodies against platelet membrane<sup>6,7,8</sup>.

ITP is characterized by a moderate to severe decrease in the platelet count, and constitutes approximately 5% of cases of thrombocytopenia in pregnancy, ITP requires monitoring during pregnancy and after delivery and may require treatment due to the higher risk of maternal hemorrhage when the platelet count is low<sup>9,10</sup>. There is a minor risk of thrombocytopenia in the newborn. Pre-eclampsia and HELLP (Hemolysis, elevated liver enzymes and low platelet count) syndrome are considered to be rare cause of thrombocytopenia in pregnancy. The maternal platelet count returns to normal within 3-5 days of delivery<sup>11</sup>. There are additional, rarer causes of thrombocytopenia during pregnancy, including thrombotic thrombocytopenic purpura (TTP), hemolytic uremic syndrome (HUS), disseminated intravascular coagulation (DIC), systemic lupus erythematosus (SLE), anti-phospholipid antibodies syndrome (APLA), or it may be induced by drugs (such as heparin)<sup>12,13</sup>.

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**METHODOLOGY**

The study was performed at the Department of pathology and department of obstetrician and gynecology at Liaquat University of Medical & Health Sciences, Jamshoro. All pregnant females were included in the study seen at Obs & Gynae department. Patients with auto immune disorders were excluded. 1130 consecutive pregnant women came to pathology and Obs & Gynae Department were studied. Data entered in Performa and 04ml EDTA and 3ml clotted sample were drawn by disposable syringe. Platelets count was performed on fully automatic hematology analyzer. HCV were performed on ELISA and LFTs were done.

**RESULTS**

During the study period, 1130 patients were seen in Pathology & Obs wards of LUMHS hospital, Sind. The mean age of women was 33.7±5.9 with range of 18 to 48 years. The mean parity was 03 with range of 0 to 6. Incidence of thrombocytopenia in pregnancy was 13.11%. The main causes are gestational thrombocytopenia (GT) (55.55%), immune thrombocytopenic purpura (ITP) (16.8%), preeclampsia (14.5%), HCV positive pregnancy women were (11%), HELLP (3%). Women with thrombocytopenia were significantly older compared with patients of no thrombocytopenia (39.7±5.9 versus 28.7±5.7, p=0.001) (Table1 & Fig 1)

Fig 1: Causes of thrombocytopenia in pregnancy

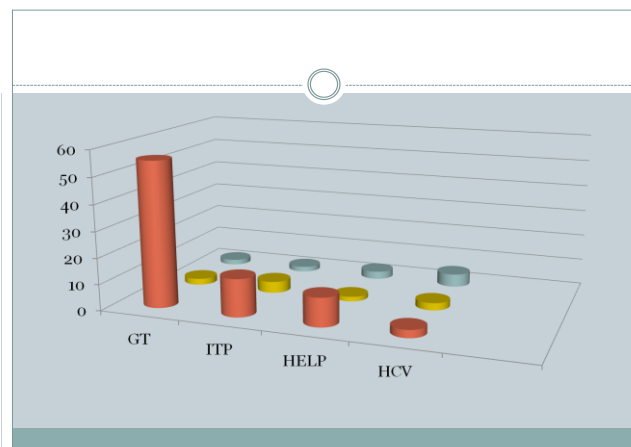


Table 1: Causes of thrombocytopenia in pregnancy

Aetiology	%age
Gestational thrombocytopenia	55.5
Pre eclampsia	21.2
Immune thrombocytopenia	16.8
HELLP syndrome	13.45
HCV positive patients	8.02

**DISCUSSION**

Incidence of thrombocytopenia in pregnant women was 13.11% in this study, these results are in favor of studies of Kelton (2002)<sup>15</sup>, Michel et al (2003)<sup>16</sup>, Klinck et al (2008)<sup>17</sup> and Maynard et al (2005)<sup>21</sup> who also observed 12.9% & 12.6% incidence of thrombocytopenia in their studies. Regarding aetiology of thrombocytopenia, gestational thrombocytopenia (GT) is 55.5% in this study. This is consistent with the results of Klinck et al (2008)<sup>17</sup> and Maynard et al (2005)<sup>21</sup>, who also observed same result. Other causes of thrombocytopenia are ITP (16.8%), Pre eclampsia (21.2%), HELLP syndrome (13.45%) and HCV +ve patients (8.02%). These results are in favor of many studies<sup>18,19,21</sup> who also observed approximately same results in their studies.

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