



## Prevalence of Gestational Thrombocytopenia: A Hospital Based Study

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### Abstract

**Background:** *Thrombocytopenia affects 6% to 10% of all pregnant women and other than anemia is the most common hematologic disorder in pregnancy. There are many potential causes of pregnancy associated thrombocytopenia. Pregnancy is associated with numerous metabolic, immunologic, and other homeostatic changes that require careful consideration when attempting to define the cause of thrombocytopenia in a particular individual. The present study was conducted to know the prevalence of gestational thrombocytopenia in our hospital in Kashmir valley.*

**Aim:** *To find out the prevalence of thrombocytopenia in pregnancy; as per age; as per parity i.e. in primigravidae and in multigravidae and in relation to the demographic profile of the patients.*

**Methods:** *An observational study was conducted in 1000 pregnant patients in our maternity hospital who were enrolled at the first antenatal visit, irrespective of the gestational age. Platelet count estimation was done through an automated blood count analyzer. Women whose platelet count was done before 28 weeks had a repeat count done in the third trimester to detect gestational thrombocytopenia (GT). Platelet count was repeated once in each trimester.*

**Results:** *Majority of studied subjects were aged between 30-34 years with 31.8% primigravidae and 68.2% multigravidae. Prevalence of gestational thrombocytopenia was 43.7%. As per parity it was 41.2% in primigravidae and 44.9% in multigravidae patients with a p value of 0.276 and as per age 42.7% were <30 years and 44.5 were >30 years with a p value of 0.576. Prevalence of thrombocytopenia was highest in district Srinagar 51.4% followed by Pulwama 50.5% and then Budgam 47.7%.*

**Conclusion:** *Gestational thrombocytopenia is the most common cause of thrombocytopenia in pregnancy and is not associated with any adverse events both for the mother or the baby. A proper evaluation and appropriate management, by both the obstetrician and haematologist plays a significant role in preventing ensuing complications. Further studies are required to know the prevalence of thrombocytopenia in pregnancy, its causes and the effects on the mother and the baby.*

**Keywords:** *Gestational thrombocytopenia, Platelet count, primigravidae, multigravidae Obstetric thrombocytopenia, Medical thrombocytopenia, Pregnancy with ITP.*

### Introduction

Thrombocytopenia, defined as platelet count (C) less than 150,000 per  $\mu\text{l}$ <sup>1,2</sup> is a common hematological disorder. It is second only to anemia as the most common hematological abnormality in pregnancy<sup>3</sup>. Thrombocytopenia has been more commonly diagnosed in pregnant women in the last 20 years. It usually results in bleeding into mucus membranes presenting as petechiae, echymoses, epistaxis, gingival bleeding etc. However, bruising, hematuria, gastrointestinal bleeding and rarely intracranial hemorrhage can also occur. Thrombocytopenia in pregnant women may result from the effects of several diverse mechanisms, which may be either physiological or pathological. Magann et al.<sup>4</sup> divided thrombocytopenia according to severity into mild (C-100,000 to 150,000/ $\cdot\text{l}$ ), moderate (C-50,000 to 100,000/ $\cdot\text{l}$ ) and severe (C <50,000/ $\cdot\text{l}$ ) thrombocytopenia. The majority of thrombocytopenic pregnant women is healthy, has no history of thrombocytopenia, and is incidentally diagnosed by blood testing. This condition, called incidental or gestational thrombocytopenia (GT), usually has no influence on pregnancy, labor and delivery or on the newborn. Thrombocytopenia is a common problem during pregnancy, often under diagnosed and mismanaged.

### Aims and Objectives

1. To estimate the prevalence of thrombocytopenia in pregnant patients.
2. To find out the prevalence as per age of the patients.
3. To find out the prevalence as per the parity of the patients.
4. To find out the prevalence in relation to demographic profile of the patients.

### Material and Methods

The present observational study was conducted from 2015 to 2017 in the Postgraduate Department of Anaesthesiology in collaboration with the Department of Obstetrics and Gynaecology, Lalla Ded Hospital, an associated hospital of Government Medical College, Srinagar after obtaining the ethical clearance from the institutional ethical committee.

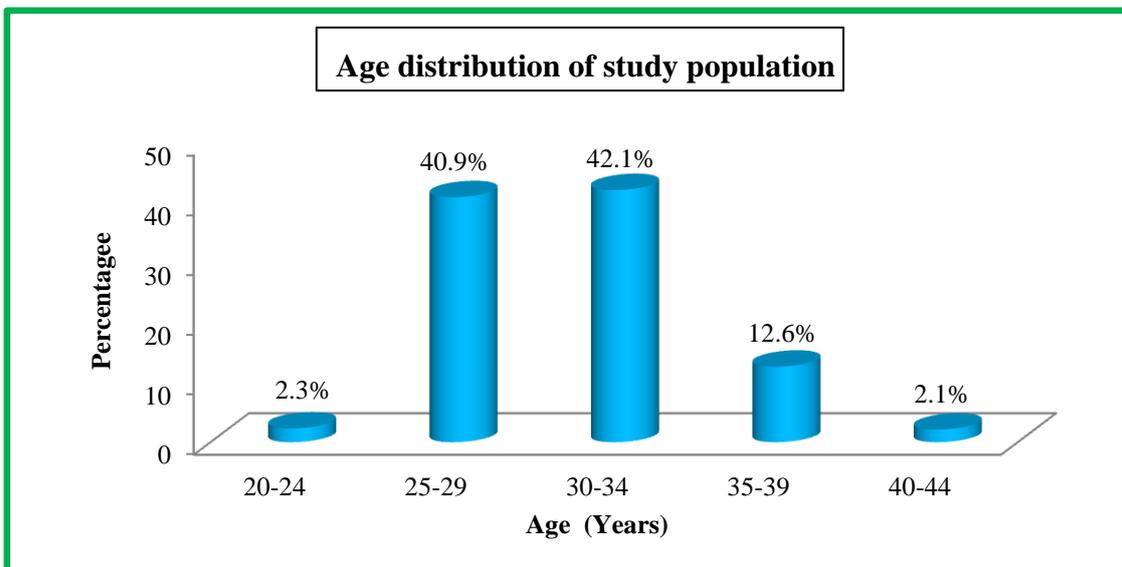
Antenatal women were enrolled in the study at first visit, irrespective of gestational age. All women had platelet count estimation at the time of enrollment. Platelet count assessment was done through automated blood count analyzer with routine antenatal hematological evaluation of the patient.

Women with normal platelet count before 28 weeks had a repeat platelet count in third trimester to detect gestational thrombocytopenia. All the thrombocytopenic cases were followed up throughout the antenatal period till delivery to record any complications that developed due to low platelet counts. Platelet counts were repeated once in each trimester.

Statistical Analysis: Data obtained was saved in computer using software Microsoft Excel and then analyzed using Statistical Package for Social Sciences (SPSS Ver. 20). Appropriate statistical tests were applied to obtain the results.

### Observations and Results

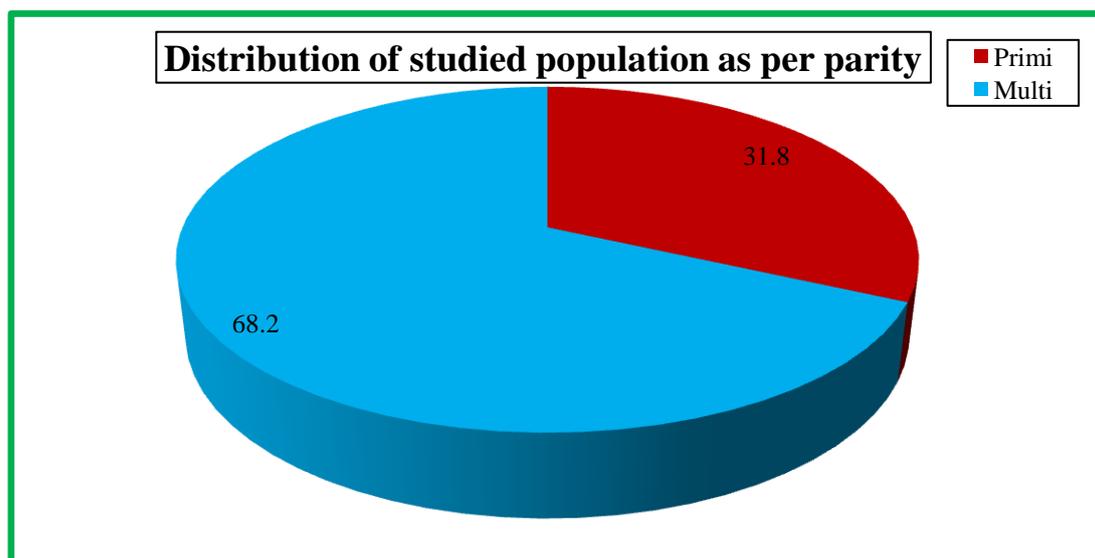
Age (years)	Frequency	Percentage
20-24	23	2.3
25-29	409	40.9
30-34	421	42.1
35-39	126	12.6
40-44	21	2.1
Total	1000	100
Mean $\pm$ SD=29.5 $\pm$ 3.94		



Majority of our studied subjects i.e. 421 (42.1%) were aged between 30-34 years while as only 21 (2.1%) patients were 40-44 years of age.

**Table 2: Distribution of studied population as per parity**

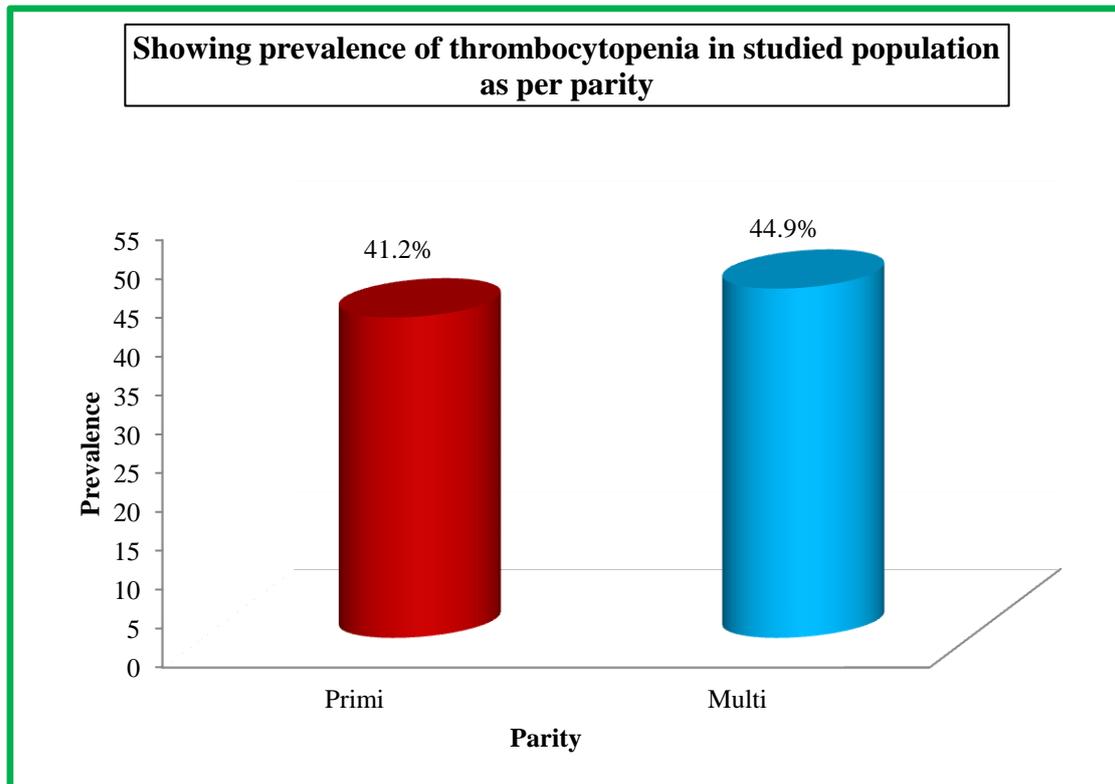
Parity	No.	Percentage
Primi	318	31.8
Multi	682	68.2
Total	1000	100



There were 318 (31.8%) primigravida patients in our study and 682 (68.2%) patients were multigravida.

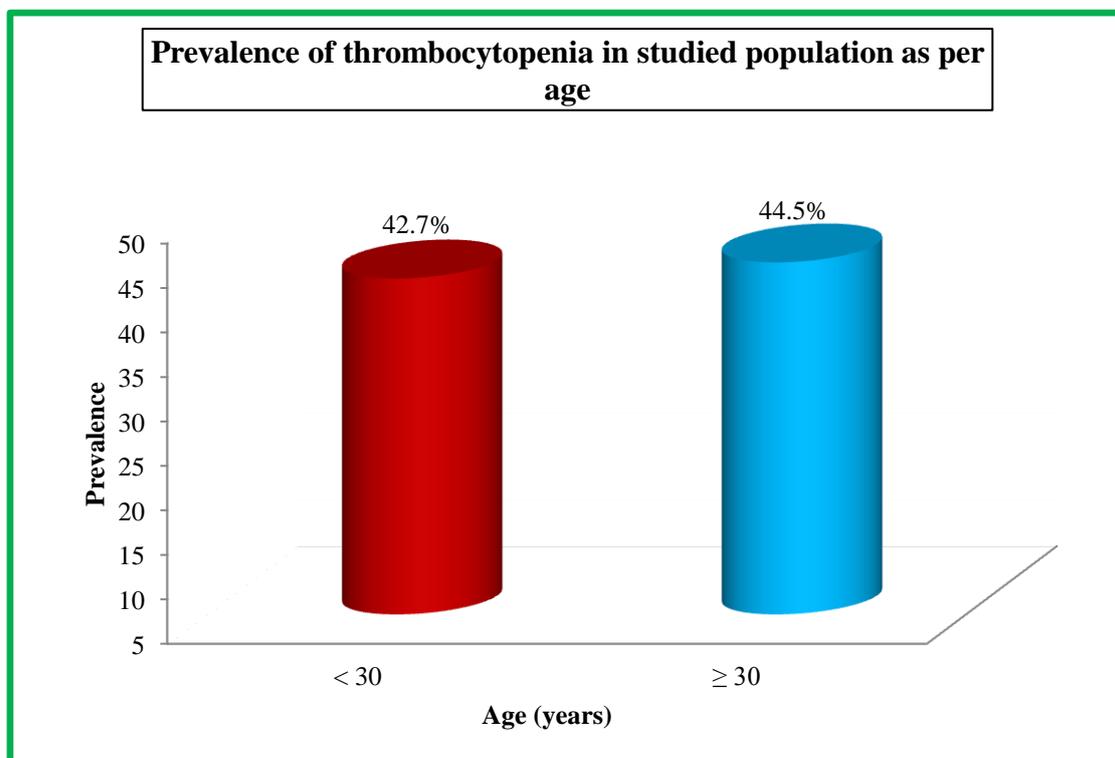
**Table 4: Prevalence of thrombocytopenia in studied population as per parity**

Parity	Thrombocytopenia Present	Thrombocytopenia Absent	Prevalence	P-value
Primi	131	187	41.2	0.276
Multi	306	376	44.9	
Total	437	563	43.7	



Thrombocytopenia was present in 131 primi and 306 multigravida patients.

Age (years)	Thrombocytopenia Present	Thrombocytopenia Absent	Prevalence	P-value
< 30	184	247	42.7	0.576
≥ 30	253	316	44.5	
Total	437	563	43.7	



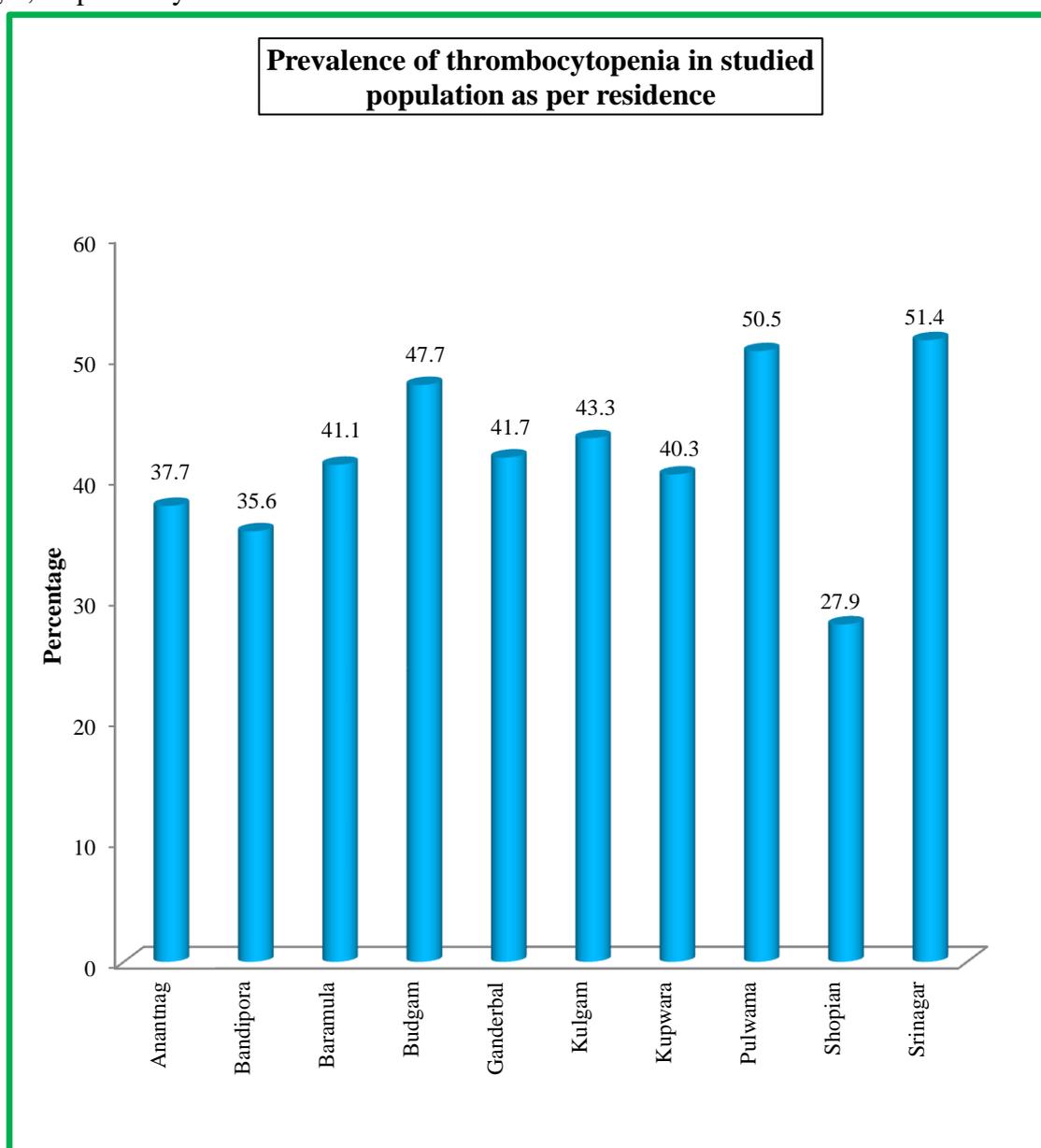
A total of 184 patients aged <30 had thrombocytopenia while as there were 253 patients with thrombocytopenia aged ≥30 years.

**Table 6:** Prevalence of thrombocytopenia in studied population as per residence

Residence	Thrombocytopenia Present	Thrombocytopenia Absent	Prevalence
Anantnag	20	33	37.7
Bandipora	26	47	35.6
Baramula	83	119	41.1
Budgam	95	104	47.7
Ganderbal	10	14	41.7
Kulgam	13	17	43.3
Kupwara	52	77	40.3
Pulwama	50	49	50.5
Shopian	12	31	27.9
Srinagar	76	72	51.4
Total	437	563	43.7

Chi-square=14.973; P-value=0.092

There were 20, 26, 83, 95, 10, 13, 52, 50, 12, 76 patients positive for thrombocytopenia in the studied districts of Anantnag, Bandipora, Baramulla, Budgam, Ganderbal, Kulgam, Kupwara, Pulwama, Shopian and Srinagar, respectively.



## Discussion

Gestational thrombocytopenia, also known as incidental thrombocytopenia of pregnancy, is the most common cause of thrombocytopenia in pregnant women, accounting for approximately 75% of all cases.<sup>5</sup> Normal pregnancy is associated with a physiologic fall in the platelet count that is characterized by a leftward shift in the platelet count distribution.<sup>6</sup> The reason for this decline is unknown, although it has been speculated that these changes may reflect dilution, decreased platelet production, or increased platelet turnover during pregnancy.<sup>7</sup> Regardless, the fall in the platelet count during normal pregnancy results in some pregnant women developing platelet counts that fall into the thrombocytopenic range.<sup>6</sup> Although there is no well-established minimum value for the platelet count in gestational thrombocytopenia, most experts consider this diagnosis to be less likely when the platelet count falls below 70,000/<sub>L</sub>. Gestational thrombocytopenia is not associated with adverse outcomes to either the mother or fetus.<sup>8</sup> The incidence of fetal or neonatal thrombocytopenia in the offspring of such patients is no higher than that of non thrombocytopenic women, and when it occurs often results from coincident neonatal alloimmune thrombocytopenia.<sup>9,7</sup> Gestational thrombocytopenia is self-limited and resolves within 1 to 2 months after delivery.

The prevalence of gestational thrombocytopenia in our study is 43.7% while as it is 15.3% in a study done by Edenghohon Olayemi et al (2012)<sup>10</sup>. This figure is higher than figures of 11.6% reported by Boehlen et al in 2006<sup>11</sup> and 7.2% reported by Sainio et al in 2000<sup>12</sup>.

In a study conducted by Micheal Parnas et al in 2006<sup>13</sup>, prevalence of gestational thrombocytopenia was 53% while it is 43.7% in our study. Shiny Vargashe et al conducted a study in 2016 in which 64 of 1532 women had thrombocytopenia (4.2%), 77.8% of these had gestational thrombocytopenia. The prevalence of GT in our study was 43.7%.

In a study conducted by Monica Arora et al in 2016<sup>14</sup>, the prevalence of gestational thrombocytopenia was 61%. In our study the prevalence was 43.7%.

Prevalence of gestational thrombocytopenia was 64.2% in a study conducted by Singh Nisha et al in 2012<sup>15</sup>. There were 74.7% cases of mild thrombocytopenia, 17.9% of moderate and 7.4% were thrombocytopenia. Similar to our study with more percentage falling into mild thrombocytopenia.

## Conclusion

Gestational thrombocytopenia is the most common cause of thrombocytopenia in pregnancy and is not associated with any adverse event both for the mother or baby. Pre-eclampsia, eclampsia and HELLP syndrome constitute the other cause of thrombocytopenia. ITP is a rare cause of thrombocytopenia in pregnancy. Although there is no risk of fetomaternal haemorrhagic complication in GT.

Proper evaluation and appropriate management by both the Obstetrician and Hematologist plays a significant role in preventing ensuing complications. Further studies are required to know prevalence of thrombocytopenia in pregnancy and its causes and effects on mother and baby.

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