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Original Research Article

Prevalence of thrombocytopenia in patients with viral infection across different cities in India

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ABSTRACT

Background: Thrombocytopenia, which signifies a low platelet count usually below 150 × 109/L, is a common finding following or during many viral infections. Viral infection innate and adapt immune response where platelets play a passive role in antiviral activity. The patients with viral infection are at risk of developing decreased platelet count and develop the chance of bleeding. The present study designed to find the prevalence of thrombocytopenia in patients with viral infection.

Materials and Methods: A descriptive cross section survey design used to identify the prevalence rate of thrombocytopenia in patients with viral infection in India the cities studied are Lakhimpur 960 patients, Panipat 1345 patients, Sonipat 1357 patients, Gohana 758 patients, Delhi 1165 patients, a total 5585 patients diagnosed with viral infection samples were selected of which 395 patients developed thrombocytopenia, the samples were analyzed at various selected diagnostic centers.

Results: The present study found that in Lakhimpur for 960 patients with viral infection 48 patients samples developed thrombocytopenia, Panipat for 1345 patients with viral infection 118 patients samples developed thrombocytopenia, Sonipat for 1357 patients with viral infection 85 patients samples developed thrombocytopenia, Gohana for 758 patients with viral infection 49 patients samples developed thrombocytopenia and in Delhi for 1165 patients with viral infection 95 patients samples developed thrombocytopenia respectively. The overall prevalence of thrombocytopenia among patients with viral infection is 7.07%.

Conclusion: Viral infection caused due to any virus triggers the immune response where in platelets act as passive bystanders during viral infection, the knowledge of viral infection and better management of infection bring down the thrombolytes and cause thrombocytopenia. The present study identified the prevalence of the thrombocytopenia among patients with viral infection.

1. Introduction

Thrombocytopenia, which signifies a low platelet count usually below 150 × 109/L, is a common finding following or during many viral infections. Mild thrombocytopenia, combined with lymphopenia in a patient with signs and symptoms of an infectious disease, raises the suspicion of a viral infection.[1] This phenomenon is classically attributed to platelet consumption due to inflammation-induced coagulation, sequestration from the circulation by phagocytosis and hypersplenism, and impaired platelet production due to defective megakaryopoiesis or cytokine-induced myelosuppression. Platelets as passive bystanders during viral infection. Platelets are increasingly recognized as active players in the (antiviral) immune response and have been shown to interact with cells of the innate and

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adaptive immune system as well as directly with viruses. Hence, the present study is designed to assess the prevalence of thrombocytopenia among patients with viral infection.[2–6]

2. Objectives

The present study aimed to assess the prevalence of prevalence of thrombocytopenia in patients with viral infection.

3. Materials and Methods

A survey study designed to assess the prevalence of thrombocytopenia among patients with viral infection in multiple cities at north India the cities selected are Lakhimpur, Panipat, Sonipat, Gohana, Delhi for a period of 11 months from January 2022 to November 2022. A total of 5585 patients diagnosed with viral infection samples from 5 cities were selected from different diagnostic centers, of these at Lakhimpur 48 samples, Panipat 118 samples, Sonipat 85 samples, Gohana 49 samples, Delhi 95 samples respectively were found having decreased thrombocytes.

4. Results

The present study designed to assess the prevalence of thrombocytopenia among patients with viral infection. The following are the findings of the study.

Table 1, describes the distribution of prevalence of thrombocytopenia among patients with viral infection at various cities under study in North India, the cities are Lakhimpur total 960 samples were collected of them 48 samples, in Panipat total 1345 samples were collected 118 samples, in Sonipat total 1357 samples were collected of them 85 samples, in Gohana total 758 samples were collected of them 49 samples and in Delhi total 1165 samples were collected of them 95 samples had decreased platelet counts respectively.

The study also found that prevalence of thrombocytopenia among patients with viral infection at various cities for total sample of 5585, at Lakhimpur 5.00%, Panipat 8.77%, Sonipat 6.26%, Gohana 6.46%, Delhi 8.15% respectively and total prevalence of thrombocytopenia among patients with viral infection at various cities under study in North India is 7.07% is represented in pie diagram.

From Table 2, the study found that out of 395 total patients developed thrombocytopenia samples who were diagnosed with viral infection 231 (58.48%) were males and 164 (41.51%) were females. Among which in Lakhimpur out of 48 samples 38 (79.16%) were males and 10 (20.83%) were females, at Panipat in 118 samples 53 (44.91%) were males and 65 (55.08%) were females, at Sonipat 85 samples collected of which 45 (52.94%) were males and 40 (47.05%) were females, at Gohana total 49 samples of them 34 (69.38%) were males and 15 (30.61%) were females and at Delhi 95 samples of them 61 (64.21%) were males and 34 (35.78%) were females respectively, signifies that the prevalence of thrombocytopenia among patients with viral infection high in male than in females.

Table 3, describes the distribution of the samples as per their age in years, in Lakhimpur out of 48 thrombocytopenia samples with viral infection 20 to 40 years aged samples were 18(37.50%), 41 to 60 years aged were 20 (41.66%) and more than 61 years were 10(20.83%), in Panipat out of 118 thrombocytopenia samples with viral infection 20 to 40 years aged samples were 18(15.25%), 41 to 60 years aged were 88(74.57%) and more than 61 years were 12 (10.16%), in Sonipat out of 85 thrombocytopenia samples with viral infection 20 to 40 years aged samples were 20(40.81%), 41 to 60 years aged were 23 (46.93%) and more than 61 years were 6(12.24%), in Gohana out of 49 thrombocytopenia samples with viral infection 20 to 40 years aged samples were 20(40.81%), 41 to 60 years aged were 23 (46.93%) and more than 61 years were 6(12.24%), in Delhi out of 95 thrombocytopenia samples with viral infection 20 to 40 years aged samples were 30(31.57%), 41 to 60 years aged were 53 (55.78%) and more than 61 years were 12(12.63%) signifies that the thrombocytopenia can develop with viral infection to any age group.

5. Discussion

The present study aimed to study the prevalence of the thrombocytopenia among patients with viral infection in selected various cities at North India. The study was conducted at 5 cities are Lakhimpur, Panipat, Sonipat, Gohana and Delhi for a period of 11 month from January 2022 to November 2022 collected 5585 samples of which 395 samples were showed thrombocytopenia who were diagnosed with viral infection.[7–9]

The present study designed to assess the prevalence of the thrombocytopenia among patients with viral infection found that the prevalence is 7.07% in selected cities, these findings were similar to the study 17.1% of HIV infected patients developed thrombocytopenia.[10]

the study observed that out of 395 having thrombocytopenia who were diagnosed with viral infection samples 231 (54.48%) were males and 164 (41.51%) were females these finding were similar to study[11–13] and the study also found that the age of viral infection induced thrombocytopenia is observed in all age groups these findings were similar to the study.[12] However, the age group between 41 to 60 years were at high prevalence of developing thrombocytopenia due to viral infection.

6. Conclusion

Viral infection can be caused by various stains of virus, the infection brings down the immunity level and suspect the individual to various other illness and diseases, the regular screening, vaccination and preventive measures can

Table 1: Describes the distribution of the prevalence of thrombocytopenia among patients with viral infection at various cities under study.

S.No.	City	Number of patients samples	Number of viral infected patients developed thrombocytopeni c	Percentage
1	Lakhimpur	960	48	5.00
2	Panipat	1345	118	8.77
3	Sonipat	1357	85	6.26
4	Gohana	758	49	6.46
5	Delhi	1165	95	8.15
	Total	5585	395	7.07

Table 2: Describes the distribution of gender of the samples developed thrombocytopenia due to viral infection

S.No	City	Number of viral infection induced thrombocytopenia	Male	Percentage	Female	Percentage
1	Lakhimpur	48	38	79.16	10	20.83
2	Panipat	118	53	44.91	65	55.08
3	Sonipat	85	45	52.94	40	47.05
4	Gohana	49	34	69.38	15	30.61
5	Delhi	95	61	64.21	34	35.78
Total		395	231	58.48	164	41.51

Table 3: Describes the distribution of the samples according to their age in years.

S.No.	City	Number of viral infection induced thrombocytopenia	Age in years	Number of samples	Percentage
			20 to 40	18	37.50
1	Lakhimpur	48	41 to 60	20	41.66
			More than 61	10	20.83
			20 to 40	18	15.25
2	Panipat	118	41 to 60	88	74.57
			More than 61	12	10.16
			20 to 40	25	29.41
3	Sonipat	85	41 to 60	55	64.70
			More than 61	5	5.88
			20 to 40	20	40.81
4	Gohana	49	41 to 60	23	46.93
			More than 61	6	12.24
			20 to 40	30	31.57
5	Delhi	95	41 to 60	53	55.78
			More than 61	12	12.63
Total		395			

prevent viral infection. The knowledge of prevalence of viral infection induced thrombocytopenia helps in optimal management of viral infection by right antiviral drugs, this helps in prevention of complication related viral infection, the present study found that prevalence of thrombocytopenia samples among patients with viral infection was 7.07% which is evident by other studies. The prevalence of thrombocytopenia in selected cities of North India gives relevant information to prevent, control the viral infection rate by early diagnosis and treatment manage patients as needed.

7. Conflict of Interests

None to declare.

8. Source of Funding

None.

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