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Original Research Article

Prevalence of drug induced thrombocytopenia in five cities of India: A cross sectional descriptive study

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ABSTRACT

Background: Thrombocytopenia is the condition in which the platelets counts are less than few lakhs and cause the symptoms of the bleeding. The drugs which are used as therapeutic for the management of the diseases, due to adverse effects causes thrombocytopenia. The present study aims to find the prevalence of the drug induced thrombocytopenia in various cities in India

Materials and Methods: A cross sectional survey study design used to identify the prevalence rate of the drug induced thrombocytopenia in Lakhimpur 1050 samples, Panipat 1465 samples, Sonipat 815 samples, Gohana 845 samples, Delhi 1265 cities in India a total 5440 samples from 5 cities in north India were selected from different diagnostic centers.

Results: The present study found that in Lakhimpur total 1050 samples were collected of them 39 samples, in Panipat total 1465 samples were collected 66 samples, in Sonipat total 815 samples were collected of them 63 samples, in Gohana total 845 samples were collected of them 40 samples and in Delhi total 1265 samples were collected of them 53 samples were drug induced thrombocytopenia respectively. The overall prevalence of drug induced thrombocytopenia is 4.7%.

Conclusion: Drug induced thrombocytopenia is result of the adverse effect of various group of drugs used as therapeutic management and the prevalence of the drug induced thrombocytopenia is essential to manage and prevent the complication. The present study identified the prevalence of drug induced thrombocytopenia in selected North India.

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1. Introduction

Drug induced thrombocytopenia is clinical disorder, caused due to administration of therapeutic drugs for management of various diseases.[1] More than 300 drugs are identified that can cause drug induced thrombocytopenia,[1] the symptoms may begin in 5 to 10 days of drug administration, even with single dose administration can cause immediate effects,[2] the stopping of drugs for 1 to 2 days can recover the patients from complication related to drug effects, the common drugs that lead to drug induced thrombocytopenia are quinidine,[3] vancomycin oxaliiplatin,[4] suramin,[5] abciximab, tirofiban,[6] heparin.pencillin,[7] sulfonamide, statins, ranitidine, NSAIDs'. Hence the present study designed to study the prevalence of drug induced thrombocytopenia at various selected cities in North India.

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2. Objectives

The present study is aimed to assess the prevalence of drug induced thrombocytopenia in multiple cities at north India.

3. Materials and Methods

A survey study designed to assess the prevalence of drug induced thrombocytopenia in multiple cities at north India in Lakhimpur, Panipat, Sonipat, Gohana, Delhi for a period of 11 months from January 2022 to November 2022. A total of 5440 samples from 5 cities were selected from different diagnostic centers, of these at Lakhimpur 1050 samples, Panipat 1465 samples, Sonipat 815 samples, Gohana 845 samples, Delhi 1265 samples respectively were collected with symptoms of decreased platelets count and diseased associated with clinical picture, the blood samples were collected for assessing the thrombocytes count.

Table 1: List of drugsused that caused drug induced thrombocytopenia and number of patients used the respective drugs

S.No.	Drugs induced thrombocytopenia	Number of patients given these drugs
1	Vancomycin	28
2	Linezolid	21
3	Quinolone	19
4	Quinine	17
5	NSIAD'S	15
6	Penicillin	19
7	Sulphonamides	23
8	Chloramphenicol	10
9	Ciclosporin	14
10	Carbamazepine	21
11	Digoxin	13
12	Phenylbutazone	11
13	Phenytoin	15
14	Sodium Valproate	13
15	Tinofiban	10
16	Eptifibatide	7
17	Abciximab	5
	Total	261

4. Results

The present study is designed to assess the prevalence of drug-induced thrombocytopenia. The following are the findings of the study.

Table 2, describes the distribution of drug induced thrombocytopenia cases at various selected cities of North India, in Lakhimpur total 1050 samples were collected of them 39 samples, in Panipat total 1465 samples were collected 66 samples, in Sonipat total 815 samples were collected of them 63 samples, in Gohana total 845 samples were collected of them 40 samples and in Delhi total 1265 samples were collected of them 53 samples were drug induced thrombocytopenia respectively.

The study also found that prevalence of drug induced thrombocytopenia in total samples of 5440, at Lakhimpur is 3.7%, Panipat is 4.5%, Sonipat is 7.7%, Gohana is 4.7%, Delhi is 4.1% respectively and total prevalence of drug induced thrombocytopenia in North India is 4.7% is represented in pie diagram.

FromTable 3, the study found that out of 261 total drug induced thrombocytopenia cases 165 (63.21%) were males and 96 (58.18%) were females. Among which in Lakhimpur out of 39 samples 20 (12.12%) were males and 19 (19.79%) were females, at Panipat in 66 samples 40 (24.24%) were males and 26 (27.08%) were females, at Sonipat 63 samples collected of which 43 (26.06%) were males and 20 (20.83%) were females, at Gohana total 40 samples of them 18 (10.90%) were males and 22 (22.91%) were females and at Delhi 53 samples of them 44 (26.66%) were males and 9 (9.37%) were females respectively, signifies that the prevalence of drug induced thrombocytopenia was high in male than in females.

Table 4, describes the distribution of the samples as per their age in years, in Lakhimpur out of 39 drug induced thrombocytopenia samples 20 to 40 years aged samples were 15(38.46%), 41 to 60 years aged were 15(38.46%) and more than 61 years were 9(23.07%), in Panipat out of 66 drug induced thrombocytopenia samples 20 to 40 years aged samples were 23(34.84%), 41 to 60 years aged were 24 (36.36%) and more than 61 years were 19 (28.78%), in Sonipat out of 63 drug induced thrombocytopenia samples 20 to 40 years aged samples were 23(36.50%), 41 to 60 years aged were 25(39.68%) and more than 61 years were 15 (23.80%), in Gohana out of 40 drug induced thrombocytopenia samples 20 to 40 years aged samples were 10(25.00%), 41 to 60 years aged were 15(37.50%) and more than 61 years were 15(37.50%), in Delhi out of 53 drug induced thrombocytopenia samples 20 to 40 years aged samples were 25(47.16%), 41 to 60 years aged were 20(37.73%) and more than 61 years were 8(15.09%) signifies that the drug induced thrombocytopenia can cause to any age group.

5. Discussion

The present study aimed to study the prevalence of the drug induced thrombocytopenia cases 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 Noveber 2022 collected 5440 samples of which 261 samples were showed drug induced thrombocytopenia.

The present study designed to distribution of the prevalence of the drug induced thrombocytopenia found that the prevalence is 4.7% in selected cities, these findings were similar to the study.[8–11]

Table 2: Describes the distribution of the drug induced thrombocytopenia cases at various cities under study.

S.No.	City	Number of samples	Number of drug induced thrombocytopenia	Percentage
1	Lakhimpur	1050	39	3.7
2	Panipat	1465	66	4.5
3	Sonipat	815	63	7.7
4	Gohana	845	40	4.7
5	Delhi	1265	53	4.1
Total		5440	261	4.7

Table 3: Describes the distribution of gender of the samples having drug induced thrombocytopenia.

S.No.	City	Number of drug induced thrombocytopenia	Male	Percentage	Female	Percentage
1	Lakhimpur	39	20	12.12	19	19.79
2	Panipat	66	40	24.24	26	27.08
3	Sonipat	63	43	26.06	20	20.83
4	Gohana	40	18	10.90	22	22.91
5	Delhi	53	44	26.66	9	9.37
Total		261	165	63.21	96	58.18

Table 4: Describes the distribution of the samples according to their age in years.

S.No.	City	Number of drug induced thrombocytopenia	Age in years	Number of samples	Percentage
			20 to 40	15	38.46
1	Lakhimpur	39	41 to 60	15	38.46
			More than 61	9	23.07
			20 to 40	23	34.84
2	Panipat	66	41 to 60	24	36.36
			More than 61	19	28.78
			20 to 40	23	36.50
3	Sonipat	63	41 to 60	25	39.68
			More than 61	15	23.80
			20 to 40	10	25.00
4	Gohana	40	41 to 60	15	37.50
			More than 61	15	37.50
			20 to 40	25	47.16
5	Delhi	53	41 to 60	20	37.73
			More than 61	8	15.09
	Total	261		261	

the study witnessed that out of 261 samples 165 (63.21%) were males and 96 (58.18%) were females these finding were similar to study [12–16] and the study also found that the age of drug induced thrombocytopenia is similar in all age groups these findings were similar to the study. [17,18]

6. Conclusion

Cytotoxic drugs when administered for therapeutic purpose caused drug induced thrombocytopenia, the knowledge of prevalence of disorder prevent the incidence of the disorder and the minimal use of cytotoxic drugs, the present study found that prevalence of drug induced thrombocytopenia as 4.7% which is evident by other studies. This prevalence of drug induced thrombocytopenia in selected cities of North India gives a relevant information to control and prevent the disorder and manage patients as needed.

7. Source of Funding

None.

8. Conflict of Interest

None.

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