

Frequency of Cytopenia in Patients of Hayat Abad Medical Complex Peshawar, City of Pakistan

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Abstract

Background: To determine Cytopenia in age of ≤ 1 to 95 patients both male and female are included.

Methods: In this study, patients from ≤ 1 to 95 ages were considered only to find out the cytopenia with the help of Complete Blood Count. CBC shows us complete profile of patients having cytopenia.

Result: This study was conducted on 403 (100%) were enrolled during five month and twenty seven days of study for examination of multiple conditions of Cytopenia in relative to age and gender patients in which 165 (40.9%) male and 238 (59.1%) female. The age limit from ≤ 1 -95 year and outcome of data are, anemic (47.1%), Leukopenia (6.2%) and Thrombocytopenia (76.7%)

Conclusion: Anemia was the prevailing cause of Pancytopenia and in order Thrombocytopenia and lastly Leukopenia in Patients of Hayatabad medical complex.

Keywords: Complete blood count; Cytopenia; Anemia

Introduction

Peripheral cytopenia may be depicted likewise decrease in possibly of the living segments of claiming blood i.e., red cells, white units alternately platelets. Bicytopenia may be diminished of the two cell lines and cytopenia is a complication in which all the three blood units (red blood cells, white blood cells and platelets) are held down in blood and may be due to reduction in hematopoietic cell production in the bone marrow and considerable quantity of circumstances cause cytopenia [1-5].

Aplastic anemia (38.3%), megaloblastic anemia (24.7%) Hypersplenism (16%) and acute leukemia (13.6%) are the most frequent reason of Cytopenia in Pakistan [6]. Cytopenia is a chief hematological problem detected in our day-to-day clinical study. It is a slowing down in all three cellular elements of peripheral blood contributing to anemia, leucopenia and thrombocytopenia [7].

The laboratory examination of pancytopenia is noticeable by low figures of hemoglobin (≤ 10.0 g/dl), white blood cells ($\leq 4.0 \times 10/L$) and platelet counts $9 (\leq 150 \times 10/L)$ [8]. Present study was carried on to measure of the cytopenia in subjects submitting to a Hayat Abad Medical Complex hospital of Peshawar, Pakistan.

Method and Materials

All cases have submitted to for comprehensive and systemic examinations to note anemia, leukopenia and thrombocytopenia. Patients are analyzed in hematology department of Hayat Abad Medical Complex, Peshawar

This prospective analysis was attended by 403 patients, aged ≤ 1 -95 years from the May 16 to October 16 near about five month and 27

days. All patients are reviewed by CBC (Complete Blood Count). CBC test that give figures and information about circulating cells and may clarify and sustain a primary pathological situation that reasons for further diagnosis & treatment.

Amount of blood cells is changed and distinguish in male and female, a complete blood count test is composed of several units and prospects of your establishment remaining composed and provide necessary and related information about health to determine a health status before you can count on any manifestations and serious issue, verify that a good health condition is endured segregating out the circumstances of your symptoms, find out infection and create instructions that are appropriate for comparability with subsequent test outcomes abnormal rises or falls in cell counts are noted.

Using various and advanced techniques and instruments that can contribute to significant differences in CBC parameters such as hemoglobin (HGB), hematocrit (HCT), red blood cell (RBC), Platelets (PLT) and white blood cell (WBC) Standardizing methods and laboratory techniques have minimized the effects of site-to-site dissimilarities. It makes components available: quantities of hemoglobin, red cell count, red cell indices (size and volume), platelet count & leukocyte count with full distinction. All data are tabulated in Microsoft Excel Worksheet 2013 for window seven ultimate.

Result

In the presented analysis we receive the blood tissue form 403 patients (100%) were enrolled during five month and twenty seven days of study for examination of multiple conditions of Cytopenia in relative to age and gender patients in which 165 (40.9%) are male and 238 (59.1%) are female.

The age limit was from ≤ 1 -95 years. Total participants are 403 (100%) there were 65 (16.1%) male and 125 (31.0%) female. In Figure 1

out of 403 (100%), 25 (6.2%) showed leukopenia in which 12 (3.0%) were male while 13 (3.2%) were female and 378 (93.8) showed no signs of leukopenia in which 153 (38.0%) were male and 225 (55.8) were female (Figure 1). Out of 403 (100%), 190 (47.1%) showed anemic

result in which 65 (16.1%) were male, 125 (31.0%) were female and 213 (52.9%) showed non anemic result in which 100 (24.8%) were male and 113 (28.0%) were female (Figure 2).

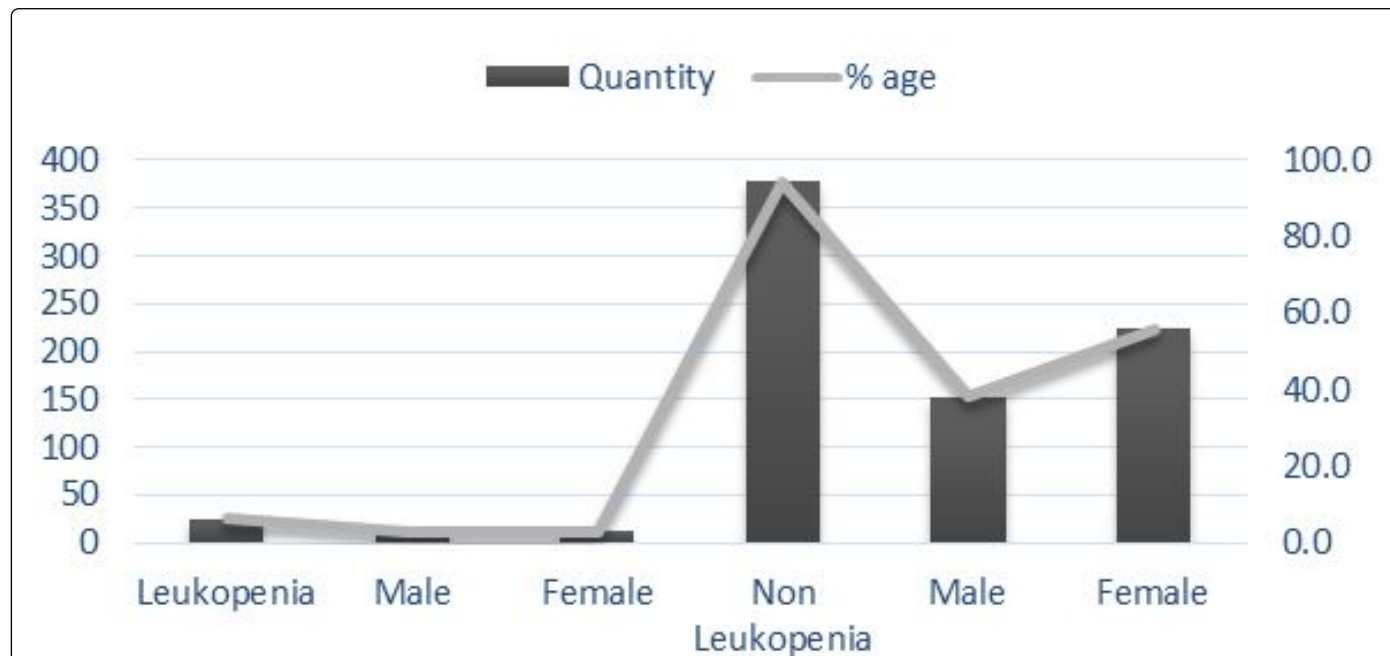


Figure 1: Age wise analysis of people showing leukopenia and non-leukopenia result in both males and females.

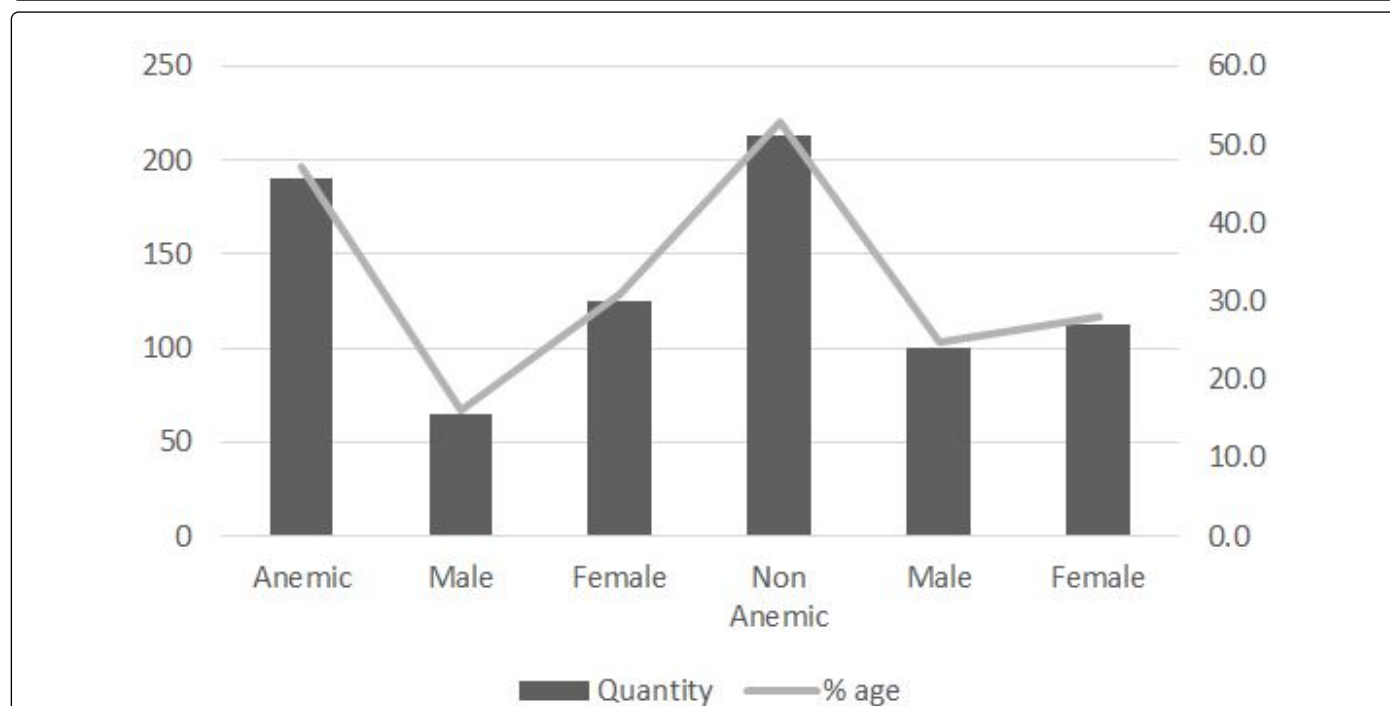


Figure 2: Age wise analysis of people showing anemic and non-anemic result in both males and females.

Near about 309 (76.7%) displayed non-thrombocytopenia in which 39 (9.7%) were male and 55 (13.6%) were female. On the other side 94

(23.3%) displayed thrombocytopenia in which 126 (31.3%) were male and 183 (45.4%) were female. All the analyzed results of S3 are explained in

age wise analysis of the leukopenia; thrombocytopenia and anemia between ages of 21-30 are explained age wise (Figure 3).

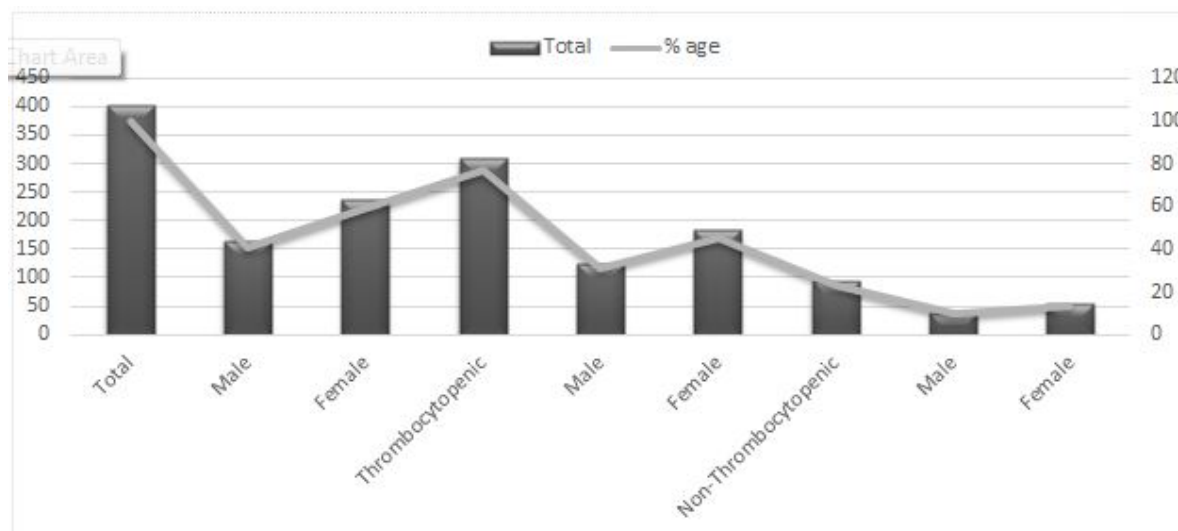


Figure 3: Age wise analysis of people showing non-thrombocytopenia and thrombocytopenia in both males and females.

In age wise analysis, the leukopenia, thrombocytopenia and anemia are majorly displayed between ages of 21-30 (Table 1).

Age (y)	M	F	Leukopenia	Non Leukopenia	Anemic	Non Anemic	Thrombocytopenic	Non Thrombocytopenic
01-10	53	30	2	51	23	30	12	41
11-20	56	35	6	50	25	31	12	44
21-30	85	62	5	80	50	35	20	65
31-40	62	35	3	59	30	32	17	45
41-50	46	23	5	41	20	26	11	35
51-60	54	35	0	54	26	28	11	43
61-70	34	14	1	31	11	23	5	29
71-80	10	4	1	9	4	6	5	5
81-95	3	0	0	3	1	2	1	2

Table 1: Age wise analysis.

Discussion

Cytopenia is a frequent and major clinical and hematological problem. Cytopenia is a common conclusion in analytic work it is not an illness but there are multiple conditions of this clinical test of anemia, neutropenia and thrombocytopenia. The initial analysis of the source of cytopenia is essential sometime most of situations are treatable [9].

It is a clinical situation in which there is diminution in the quantity of the RBC, WBC and platelets. Bicytopenia is a feature of considerable life threatening situations. The number of type of conditions causing them differs in various states [10]. The reported views on cytopenia have still set by the referral nature of patient population. There are

different opinions on the underlying etiology of cytopenia from several sections of the globe a view from pakistan found megaloblastic anemia as the most common diagnosis and the primary problem of Bicytopenia is in the bone marrow aspirates performed in their pediatric section [11,12].

Another investigation in pakistan in which they investigated near about 230 cytopenia children; met with the most frequent sources of cytopenia as aplastic anemia, megaloblastic anemia, leukemia etc. The typical clinical demonstrations of Cytopenia children in their research were pallor, fever, petechial hemorrhages, visceromegaly and bleeding from nose and gastrointestinal tract [13].

Limitation of Study

There were a lot of limitations in this study. This was a hospital based study and merely received descriptions of subjects who were advised 'complete blood count' analysis. This refers to the state of leading opportunity to develop cytopenia. There was no interaction with present complaints, clinical presentation, socioeconomic position, education status, BMI, dietary routines, pregnant/non-pregnant) and any history of loss of blood or blood transfusion.

Conclusion

From this study we concluded that anemia and leukopenia is the public cause for cytopenia. Anemia predominantly affects young adult both males and females Complete blood count was valuable.

Acknowledgement

Department of Hematology, Government Hospital in Peshawar named HMC (Hayatabad Medical Complex).

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