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ORIGINAL ARTICLE

Frequency of Hakeem Prescribed Medicinal Intake in Patients Presenting with Pancytopenia in a Tertiary Care Hospital

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ABSTRACT

Background: Pancytopenia is a common disorder faced by physicians, especially haematologists, in their daily clinical practice. Hakeem prescribed medications have been implicated as causative agent for inducing pancytopenia but frequency of such cases has not yet been reported. This study was conducted to assess the frequency of Hakeem medication in patients presenting with pancytopenia in a tertiary care hospital

Patients and methods: This prospective cross-sectional study was conducted at the Department of Haematology, Allama Iqbal Medical College / Jinnah hospital, Lahore from October 2021 to February 2022. 135 patients referred to the Department of Haematology for investigation of pancytopenia were enrolled into the study through non-probability consecutive sampling after they fulfilled the selection criteria. They were inquired about taking medicines given by hakeem prior to their index visit to the hospital. Demographics and history were recorded on a specially designed proforma. Data was analyzed using SPSS version 20.

Results: 135 referred patients presenting with pancytopenia were enrolled into the study. Mean age of the sample population was 33.14 ± 15.57 years. There were 92 (68.1%) males and 43 (31.9%) females. For their current medical condition, 40 (29.63%) patients were using Hakeem prescribed medicines with or without concomitant use of allopathic medicines, whereas 79 had no prior treatment at all.

Conclusion: The use of Hakeem prescribed medications is high in our sample population and cannot be ignored as a causative agent for occurrence of pancytopenia.

Keywords: Pancytopenia, Anaemia, Hakeem medication, Platelet count, Total leucocyte count, Absolute neutrophil count

INTRODUCTION

Pancytopenia is the simultaneous presence of anaemia, leucopenia & thrombocytopenia, consequently, it is labelled when the concentration of haemoglobin (Hb) is < 13.5g/dl in men or <11.5g/dl in women; total leucocyte count (TLC) is $<4x10^3$/l and platelet count (Plat) is < $150x10^3$/l[1]. The reported frequency of pancytopenia in Pakistani population ranges from 9.3% in one study[2], and up to 80% in another[3]. It is a common symptom of a variety of serious and life-threatening illnesses, and can be affected by a range of conditions including simple "drug-induced bone marrow hypoplasia, megaloblastic anaemia, deadly aplastic anaemia, and leukemias[4]. It may be the first clinical sign of a chronic disease ranging from benign to malignant. Hakeem prescribed medications have been implicated as causative agent for inducing pancytopenia but frequency of such cases has not been reported yet. Aplastic anaemia, enteric fever, sepsis, chronic liver illness, and megaloblastic anaemia were identified to be the most common causes of cytopenia[5,6]. Pancytopenia is characterized by anaemia, susceptibility to infection, bleeding manifestations in patients, as well as evidence of spleen, liver, and lymph node enlargement, fever, weight loss, and icterus[7,8].

Identifying the etiology and the management of chronic pancytopenia is a demanding and challenging job. Many diseases presenting as pancytopenia on Complete Blood Count (CBC) are life-threatening if not diagnosed and managed appropriately. The spectrum of probable causes is baffling, signs and symptoms overlap significantly, and many could prove life-threatening if diagnosed late in the course of management[9]. In Pakistan, use of Hakeem medicine is very common which leads to further deterioration of the clinical condition for which patients consume these medicines and these drugs have been implicated for the development of pancytopenia. It has been reported in a study that about 9.7% patients were taking medication prescribed by Hakeem for pancytopenia[2].

The aim of this study is to determine the frequency of Hakeem prescribed medicinal intake in patients presenting with pancytopenia. The literature regarding use of Hakeem prescribed medicine is not available in local population of Pakistan. Much literature is available in context of pancytopenia, its causes and ways to treat, however, the evidence regarding use of Hakeem prescribed medications is scarce as people mostly visit unregistered or untrained Hakeem which further deteriorates the patient's clinical condition and leads to severe sequelae. There is, therefore, need to find evidence for local population and to determine the role of Hakeem medicines in inducing pancytopenia. This study will help us to get local magnitudes and in future we can plan screening and management options for patients with pancytopenia.

PATIENTS AND METHODS

This prospective cross-sectional study was conducted at The Department of Haematology, Allama Iqbal Medical College / Jinnah Hospital, Lahore between October 2021 and January 2022. Patients were referred from Internal Medicine clinics for evaluation and further investigation of pancytopenia. Sample size of 135 patients was calculated with 95% confidence level, 5% margin of error and percentage of Hakeem prescription i.e. 9.7% in patients with pancytopenia. Non-probability consecutive sampling method was used. Patients aged from 16 to 70 years, both genders diagnosed with pancytopenia were included. Cut-off values for pancytopenia were defined as Hemoglobin (Hb) <10 gm/dl, Total Leucocyte Count (TLC) $<4 \times 10^9$/L, absolute neutrophil count (ANC) $<1.0x\ 10^9$/L and Platelet count < $100x10^9$/L. Pregnant females and patients with recurrent pancytopenia were excluded from the study. 135 patients who fulfilled the selection criteria and consented to be included were enrolled in to the study. Demographic information such as name, age, gender and occupation were noted and reference number generated. Then the history of patients was recorded regarding their symptoms, reason for consultation and recent use of medicines given by Hakeem before presenting to the hospital. All this information was collected in a pre-designed proforma. Laboratory tests were run and values were recorded. Data was analyzed using SPSS version 20. Quantitative variables like age, complete blood cell count was calculated as mean and standard deviation. Qualitative variables like gender, occupation, symptoms and use of Hakeem prescription was calculated as frequency and percentage.

RESULTS

In this study, we included 135 patients with pancytopenia. Mean age of the patients was 33.14 ± 15.57 years. There were 92 (68.1%) males and 43 (31.9%) females. The male-to-female ratio was 2.1:1. Mean Hb was 7.94 ± 1.60 g/dl, mean TLC was 2.45 ± 1.03 x 10^9/L, mean Platelet count was 40.27 ± 29.50 x 10^9/L and mean ANC was 0.49 ± 0.25 x 10^9/L (Table 1).

Out of 135 patients, 16 (11.9%) were already using allopathic medications for their medical problem, while 27 (20%) were being treated by Hakeem at the time of presentation, no one (0%) was on homeopathic treatment whereas 13 (9.6%) patients were taking both allopathic as well as Hakeem medicine during their current illness. Moreover, 79 patients presented with symptoms without having any prior treatment at all. (Table 2). For their current medical condition, 40 (29.63%) patients were using Hakeem prescribed medicines with or without concomitant allopathic treatment, while 95 (70.37%) were not being treated by a Hakeem (Fig 1).

For patients using Hakeem medication at presentation (Group A), mean Hb was 7.54 ± 1.83 g/dl while those who denied taking any sort of Hakeem medication (Group B), mean Hb was 8.11 ± 1.48 g/dl. Mean TLC for Group A was 2.54 ± 1.02 x 10^9/L, while for Group B, mean TLC was 2.42 ± 1.04 x 10^9/L. Mean platelet count in Group A was 44.95 ± 33.34 x 10^9/L while the mean platelet count in Group B was 38.31 ± 27.69 x 10^9/L. Similarly, patients using Hakeem prescription had mean ANC of 0.53 ± 0.27 x 10^9/L while the other group had mean ANC of 0.47 ± 0.24 x 10^9/L. The difference in both groups of patients was insignificant (p>0.05) (Table 3).

Table 1: Basic demographics of patients

n	135
Mean Age (years)	33.14 ± 15.57
Males	92 (68.1%)
Females	43 (31.9%)
Hemoglobin (g/dl)	7.94 ± 1.60
Total leukocyte count (x10^9/L)	2.45 ± 1.03
Platelet count (x 10^9/L)	40.27 ± 29.50
Absolute neutrophil count (x 10^9/L)	0.49 ± 0.25

Table 2: Use of medications

Type of medication	Frequency	Percentage
Allopathic	16	11.9%
Hakeem	27	20.0%
Homeopathic	0	0%
Allopathic + Hakeem	13	9.6%
None	79	58.5%
Total	135	100%

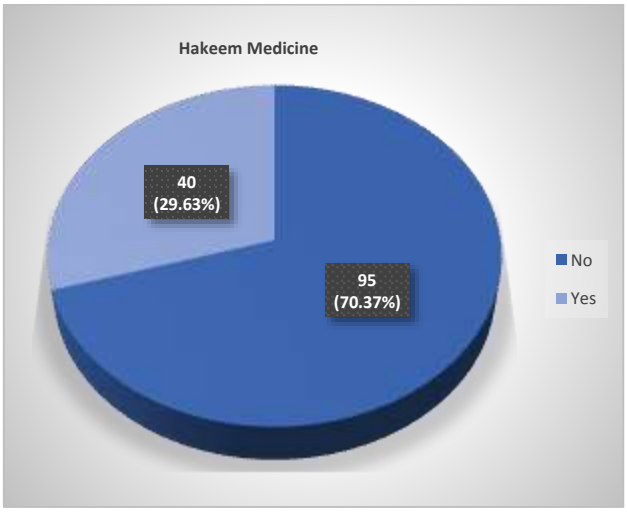

Fig 1: Recent use of Hakeem medication

Table 3: Comparison of investigations in patients with and without Hakeem medication

Laboratory parameter	Hakeem Medication		p-value
	Yes (n = 40)	No (n = 95)	
Hemoglobin (Hb) (g/dl)	7.54 ± 1.83	8.11 ± 1.48	0.060
Total leukocyte count (x10^9/L)	2.54 ± 1.02	2.42 ± 1.04	0.529
Platelet count (x10^9/L)	44.95 ± 33.34	38.31 ± 27.69	0.234
Absolute neutrophil count (x10^9/L)	0.53 ± 0.27	0.47 ± 0.24	0.186

DISCUSSION

Pancytopenia is referred to as the medical condition in which concentrations of leucocytes, erythrocytes, and thrombocytes are reduced below their respective cut-off values. Bicytopenia is a condition in which any two of these blood cell lineages are decreased. In therapy of chronic illnesses such as Thalassemia and Hepatitis C, pancytopenia may be noticed.[10] Certain antibiotics and other medications used in the treatment of Hepatitis C infection may cause pancytopenia. Aplastic anaemia, Lymphoma, Copper deficiency, and several other medical disorders can also present with pancytopenia. Pancytopenia, in turn, can lower a person's immunity and subsequently, can be fatal.[11, 12]

Bone marrow stimulant medications, blood transfusions, and bone marrow transplant are some of the current treatment options for pancytopenia. Most of the current treatment strategies are excruciatingly painful and have long-term adverse effects. As a result, employing natural medications to treat these conditions is critical. Single-lineage cytopenias can be treated with herbs including wheatgrass, papaya leaves, and garlic. Hematotoxicity can be caused by biotherapeutics for a variety of reasons, including cellular stimulation, cytotoxicity, drug-dependent and independent immunological responses, and the consequences of launching cytokine and complement cascades. In cases of biotherapeutic-induced hematotoxicity, underlying aetiology is frequently unknown.[13]

Clinically, the patient can be labeled as having pancytopenia if concentration of hemoglobin is < 13.5 g/dl for men and <11.5 g/dl for women, TLC is < 4 x 10^9/L and platelet count is <150 x 10^9/L. In our study we observed that mean Hb was 7.94 ± 1.60 g/dl which was well below the cut-off value, mean TLC was 2.45 ± 1.03 x 10^9/L and the mean platelet count was 40.27 ± 29.50, which was well below the cut-off value[14].

It has been reported that megaloblastic anaemia (27%), aplastic anaemia (15.6%), and acute leukemias (13.1%) were identified to be the most common causes of pancytopenia. The most prevalent presenting clinical symptoms were pallor (87.7%) and general body weakness (83.5%), followed by dyspnea (63.2%) and fever (62%).[14]

While in our study, the main cause of presentation of patients was fever, which was observed in 90 (66.7%) patients, followed by pallor that was noted in 81 (60.0%) patients, epistaxis in 25 (18.5%) cases, weight loss in 25 (18.5%) cases, bruises in 23 (17.0%) cases and gum bleed in 14 (10.4%) cases. Moreover, splenomegaly in 13 (9.6%) cases, hepatosplenomegaly in 11 (8.1%) cases, while 4 (3.0%) patients had hepatomegaly. Farooque et al., found that hypersplenism was observed in about 16.7% patients who were diagnosed to have pancytopenia.[15] Whereas Hayat et al., observed hypersplenism in 15.3% cases, Osama et al., observed in 19% cases while Ikram et al., observed in 25% cases.[16-18]

In our study, we observed that for their current medical condition, 40 (29.63%) patients were using Hakeem prescribed medicines while 95 (70.37%) were following other prescriptions. Farooque et al., in their study found that about 9.7% patients were using Hakeem prescribed medications[2], whereas despite a thorough literature search, we could not find another study that gave any information about Hakeem prescribed medications and their associated adverse effects. This was the basic driving force behind our study and we observed high influence of Hakeem prescription in local community.

CONCLUSION

The use of Hakeem prescribed medications is high in local population and cannot be ignored as this may lead to pancytopenia. In future, we can now implement the screening of patients for use of Hakeem prescriptions and plan treatment accordingly for pancytopenia.

Conflict of Interest: Authors of this study claim to have no conflict of interest.

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