



CODEN [USA]: IAJPBB

ISSN: 2349-7750

## INDO AMERICAN JOURNAL OF PHARMACEUTICAL SCIENCES

<http://doi.org/10.5281/zenodo.2654839>

Available online at: <http://www.iajps.com>

Research Article

### HEMATOLOGICAL PROFILE OF PATIENTS WITH MALARIA AT TERTIARY CARE HOSPITAL

<sup>1</sup>Dr. Razia Asif, <sup>2</sup>Prof Ikram Din Ujjan, <sup>2</sup>Dr. Kiran Amir, <sup>2</sup>Dr. Faheem A Memon  
and <sup>1</sup>Dr. Mariyam Khanzada

<sup>1</sup>Department of Pathology & Diagnostic Research Laboratory, Bilawal Medical College  
Jamshoro

<sup>2</sup>Department of Pathology & Diagnostic Research Laboratory, Liaquat University of Medical and  
Health Sciences – LUMHS Jamshoro

**Article Received:** February 2019

**Accepted:** March 2019

**Published:** April 2019

**Abstract:**

**OBJECTIVE:** To explore the hematological profile of patients with malaria at Tertiary care hospital.

**PATIENTS AND METHODS:** The descriptive case series study of one year was conducted at Liaquat University of Medical & Health Sciences Jamshoro. All the patients with  $\geq 01$  year of age of either gender presented with fever and chills, headache were recruited in the study and explored for malaria parasite. The relevant patients had blood complete picture (CP), MP and immunochromatographic test (ICT) to evaluate the malaria and its pattern along with exploration of hematological parameters while the frequency / percentages (%) and means  $\pm$ SD computed for study variables.

**RESULTS:** During one-year study period, total three thousand, five hundred and four (3504) patients were detected as malaria with means  $\pm$ SD for age (yrs), WBC, hemoglobin and platelet was  $57.99 \pm 10.93$ ,  $12,500 \pm 7.96$ ,  $9.87 \pm 5.52$  (gm/dL) and  $10,9000 \pm 15.83$  Respectively. Out of 3504, two thousand five hundred and fifty patients - 2550 (72.7%) were males and 954 (27.2%) were females. The anemia, leucocytosis, leucopenia, lymphocytosis, lymphopenia and thrombocytopenia was observed in 74%, 55%, 27%, 37%, 17% and 80% while among leucocytosis neutrophilia (36%), monocytosis (12%), eosinophilia (5%) and basophilia (2%).

**CONCLUSION:** The hematological changes are common complications encountered in.

**KEYWORDS:** Hematological, Malaria, Vivax and Falciparum.

**Corresponding author:**

\* Dr. Razia Asif,

Email: zulfikar229@hotmail.com

QR code



Please cite this article in press Razia Asif et al., *Hematological Profile of Patients with Malaria at Tertiary Care Hospital*, *Indo Am. J. P. Sci*, 2019; 06(04).

### INTRODUCTION:

Malaria still causes numerous deaths in endemic areas with constrained human services facilities; however, estimation of worldwide and local malaria mortality has been troublesome for three reasons [1]. To start with, the recorded case-casualty rate from malaria might be misleadingly low even in populaces that still have high fever death rates on the grounds that the ailment can be relieved effectively whenever treated expeditiously, so those scenes that are analyzed appropriately won't be those that reason the greater part of the deaths [2]. Second, where social insurance offices are constrained, serious malaria in individuals who kick the bucket of it with no therapeutic consideration is effectively confused in review enquiries with some other dangerous fever; alternately, other febrile reasons for death can be confused reflectively with malaria [3]. Finally, in most provincial zones where demise from malaria is normal, legitimate restorative consideration at the season of death is remarkable [4]. Customarily, serious malaria has been related with contamination because of *P. falciparum*. Ongoing examinations from South-East Asia have featured *P. vivax* as a noteworthy reason for dismalness and mortality in babies and youngsters [5]. Information on the clinical and epidemiological profiles of children with malaria from local population focuses is restricted. Consequently, we broke down the profile of serious malaria in children who were admitted to a tertiary focus situated at well populated city of Pakistan.

### PATIENTS AND METHODS:

The descriptive case series study of one year was conducted at Liaquat University of Medical & Health Sciences Jamshoro. All the patients with  $\geq 01$  year of age of either gender presented with fever and chills, headache was recruited in the study and explored for malaria parasite. The relevant patients had blood complete picture (CP), MP and immunochromatographic test (ICT) to evaluate the malaria and its pattern along with exploration of hematological parameters. The data was analyzed in SPSS 22, the frequency and percentage was calculated for categorical variables and mean  $\pm$ SD was calculated for numerical variables. As this was descriptive case series so no statistical test of significance was applied.

### RESULTS:

During one year study period, total three thousand, five hundred and four (3504) patients were detected as malaria with means  $\pm$  SD for age (yrs), WBC, hemoglobin and platelet was  $57.99 \pm 10.93$ ,  $12,500 \pm 7.96$ ,  $9.87 \pm 5.52$  (gm/dL) and  $10,9000 \pm 15.83$  respectively. Out of 3504, two thousand five

hundred and fifty patients - 2550 (72.7%) were males and 954 (27.2%) were females. Plasmodium vivax are seen 1550 (44.2%), plasmodium vivax gametocyte 600 (17.1%), plasmodium vivax trophozoites are seen 830 (23.6%), trophozoites and schizontes of plasmodium vivax seen 200 (5.7%), plasmodium vivax gametocyte & rings are seen 250 (7.1%), trophozoites and schizontes of plasmodium vivax & gametocytes of plasmodium falciparum 74 (2.1%) is seen respectively. The anemia, leucocytosis, leucopenia, lymphocytosis, lymphopenia and thrombocytopenia was observed in 74%, 55%, 27%, 37%, 17% and 80% while among leucocytosis neutrophilia (36%), monocytosis (12%), eosinophilia (5%) and basophilia (2%).

### DISCUSSION:

The present examination features the clinico-hematological profile of malaria in pediatrics age aggregate. *P. vivax* was the most widely recognized reason for malaria as contrasted with *P. falciparum* and mixed contamination. A comparable finding was seen in different examinations from conditions of region [6].

Anemia is a standout amongst the most widely recognized intricacies malaria disease particularly in more youthful kids and pregnant ladies in high transmission zones [7]. The pathogenesis of pallor amid jungle fever contamination isn't unmistakably comprehended. In any case, It is thought to result from the parasite's essential target is the red platelet bringing about RBCs demolition, quickened expulsion of both parasitized and non-parasitized, bone marrow brokenness and the dimension of parasitemia [8].

Platelet variations from the norm in malaria are both subjective and quantitative change. In this series, platelet includes were essentially diminished in malaria tainted individuals. Thrombocytopenia happened in 80% of malaria contaminated patients. These perceptions may infer that thrombocytopenia might be a marker of plasmodium disease [9]. The relationship of platelet check and malarial disease has recently been depicted [10].

Hematological dismalness related with *P. vivax* disease is most prominent in youthful kids particularly in the tropical nations where the components like recurrent diseases [11].

Parasite sequestration is not thought to be a critical reason for extreme iron deficiency in vivax malaria [12]. In spite of low parasitemia contrasted with *P. falciparum*, *P. vivax* has a more prominent expulsion of uninfected red cells from the course in this way

prompting comparative hazard of extreme paleness.

### CONCLUSION:

The hematological changes are common complications encountered in malaria while the plasmodium infection is largely attributed to *P. vivax* but the *P. falciparum* is also prevalent.

### REFERENCES:

1. Manas Kotepui, Bhukdee Phunphuech, Nuoil Phiwklam, Chaowanee Chupeerach, and Suwit Duangmano. Effect of malarial infection on haematological parameters in population near Thailand-Myanmar border. *Malar J.* 2014; 13: 218.
2. Muluken Birhan. Hematological Parameters and Hemozoin-Containing Leukocytes and Their Association with Disease Severity among Malaria Infected Children: A Cross-Sectional Study at Pawe General Hospital, Northwest Ethiopia. *Interdiscip Perspect Infect Dis.* 2017; 2017: 8965729
3. Zeeba Shamim Jairajpuri, Safia Rana. An Analysis of Hematological Parameters as a Diagnostic test for Malaria in Patients with Acute Febrile Illness: An Institutional Experience. *Oman Med J.* 2014 Jan; 29(1): 12–17.
4. Mohamed Al-Salahy, Bushra Shnawa. Parasitaemia and Its Relation to Hematological Parameters and Liver Function among Patients Malaria in Abs, Hajjah, Northwest Yemen. *Interdiscip Perspect Infect Dis.* 2016; 2016: 5954394.
5. Manas Kotepui, Duangjai Piwkhram. Effects of Malaria Parasite Density on Blood Cell Parameters. *PLoS One.* 2015; 10(3): e0121057.
6. Abro AH, Ustadi AM, Younis NJ, Abdou AS, Hamed DA, Saleh AA. Malaria and hematological changes. *Pakistan Journal of Medical Sciences.* 2008 Apr 1;24(2):287.
7. Rojanasthien S, Surakamolleart V, Boonpucknavig S, Isarangkura P. Hematological and coagulation studies in malaria. *Journal of the Medical Association of Thailand= Chotmaihet thangphaet.* 1992 Jan;75:190-4.
8. Gupta NK, Bansal SB, Jain UC, Sahare K. Study of thrombocytopenia in patients of malaria. *Tropical parasitology.* 2013 Jan;3(1):58.
9. Kayode OT, Kayode AA, Awonuga OO. Status of selected hematological and biochemical parameters in malaria and malaria-typhoid co-infection. *Journal of Biological Sciences.* 2011;11(5):367-73.
10. Agravat AH, Dhruva GA. Hematological changes in patients of malaria. *Journal of Cell and Tissue Research.* 2010 Dec 1;10(3):2325.
11. Lacerda MV, Mourao MP, Coelho HC, Santos JB. Thrombocytopenia in malaria: who cares?. *Memorias do Instituto Oswaldo Cruz.* 2011 Aug;106:52-63.
12. Bakhubaira S. Hematological parameters in severe complicated Plasmodium falciparum malaria among adults in Aden. *Turkish Journal of Hematology.* 2013 Dec;30(4):394.