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Research Article

OCCURRENCE OF THROMBOCYTOPENIA AMONG ADMITTED PATIENTS OF MALARIA

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Abstract:

Objective: The aim of this case work is to evaluate the prevalence & extremity of the thrombocytopenia in the admitted patients of Malaria.

Study Design and Setting: This is a prospective research work conducted in Allied Hospital Faisalabad. The duration of this research was from September 2017 to January 2019.

Methodology: All the patients who were under treatment because of high fever with no localizing symptoms were the part of this research work. Examination of peripheral smears for the parasite of malaria was the ideal procedure for the identification of this disease of malaria. The patients found positive with parasite of malaria were the members of this research work. The determination of the hematological factors carried out with the utilization of the automated analyzer. The re-evaluation of the patients available with decreases count of platelets carried out with the utilization of manual procedure.

Result: A sum of total one hundred and twenty patients underwent testing for the identification of malaria in the whole duration of this research work. Total 60 patients were available with peripheral smears as positive. Eighty-five percent (n: 51) patients positive for *P. falciparum* & fifteen percent (n: 9) patients were positive for *P. vivax*. Total seventy percent patients (n: 42) found with the presence of thrombocytopenia. Sixty-six percent (n: 32) patients were male and 24.0% (n: 10) were female patients. Ninety-three percent (n: 39) patients suffering from thrombocytopenia were positive for *P. falciparum*

& only seven percent (n: 3) patients found with *P. vivax*. Thrombocytopenia of mild nature was present in 70.0% (n: 29) patients, moderate in 22.0% (n: 9) & severe in 8.0% (n: 4) patients.

Conclusion: The high rate of mild to extreme nature thrombocytopenia was available in the admitted patients in hospital which is an alert to the prospect of infection because of malaria. The most frequent found specie in those patients was *P. falciparum*.

KEY WORDS: Infection, Malaria, Falciparum, Vivax, Smear, Peripheral, Thrombocytopenia, Endemic.

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INTRODUCTION:

The most prevalent infection in the whole world is malaria. This infection is the cause of three hundred to five hundred million patients every year in the complete world [1]. More than 40.0% population of the world is the resident of areas with high prevalence of malaria as South East Asia, Pakistan, India, most regions of Africa, different regions of middle east, South and Central part of America [2]. Our country Pakistan is the integral part of the endemic belt of malaria with more than 200 million populations. In our country, the prevalence of malaria is one patient per thousand persons [3, 4]. Malaria of severe nature is the vital reason of the high rate of mortality in the whole world and *P. falciparum* is the most common specie of the parasite involved in this occurrence of rate of mortality [5].

In the medical field, malaria is the cause of mimic of various abnormalities as there is no effective diagnostic tool available for the identification of this disease. Different case reports have showed that there are many hematological complications among the patients suffering from the disease of malaria and most common and frequent complications in the patients of malaria are anemia & thrombocytopenia [6]. The main purpose of this research work was to evaluate the prevalence, extremity and severity of the complication of thrombocytopenia among the admitted patients in the hospital suffering from the disease of malaria.

METHODOLOGY:

All the patients suffering from high fever from less than 7 days and with no localizing symptoms, getting treatment in the hospital were the participants of this research work. The patients available with the parasite of malaria on peripheral film of blood were fulfilling the inclusion criteria of this research work. The automatic analyzer was in use for the determination of the hematological features of the blood samples. Manual method was in use for the re-evaluation of patients who were available with decrease count of platelets. There were total 3 categories of the patients suffering from the complication of thrombocytopenia.

1. Patients with mild nature thrombocytopenia $< 150,000.0 \text{ to } > 50,000.0 / \text{l}$.
2. Patients with moderate nature thrombocytopenia $< 50,000.0 \text{ to } > 20,000.0 / \text{l}$.

3. Patients with severe nature thrombocytopenia $< 20,000.0 / \text{l}$.

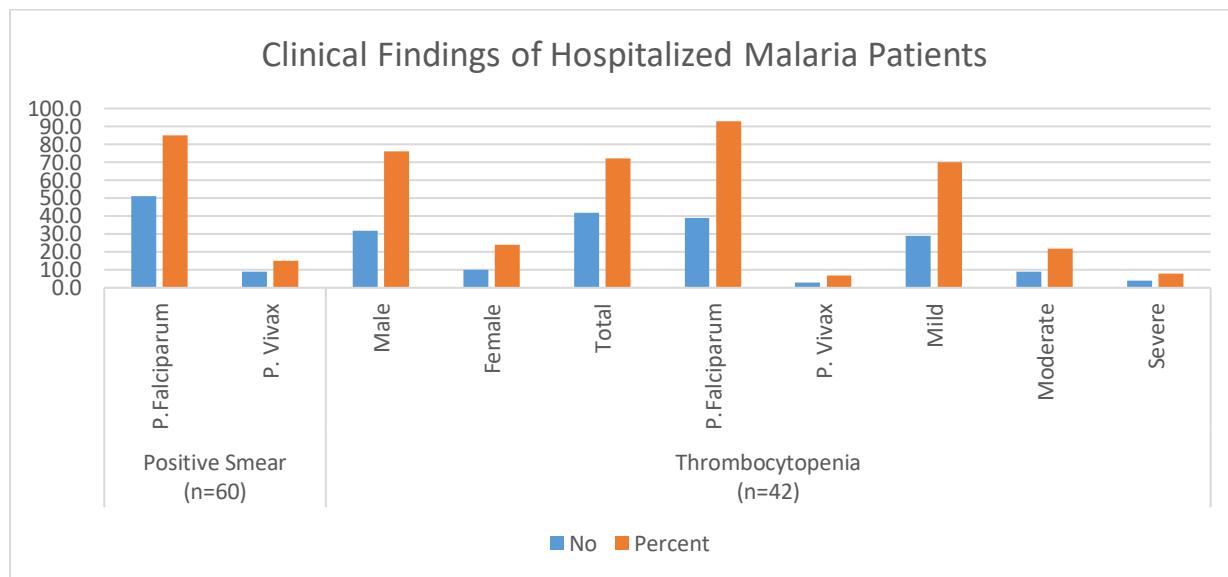
The patients suffering from the illnesses of acute febrile and found negative for parasite of malaria on the peripheral film of blood with 3 samples in a sequence with a time interval of 12 hours were not fulfilling the standard of this research work. Therefore, they were not the participants of this research study. In the same manner, the patients in whom there was determination of the localizing reasons of fever, patients with past history of disease or clinical factors describing the chronic disease of liver and the patients available with the past history of the disorder of bleeding, thrombocytopenia / purpura & the patients who were available with the past history of drug addiction like fansidar, thiazides, septran, & other chemo-therapeutic agents were not the part of this case work.

RESULTS:

A sum of total one hundred and twenty patients underwent the testing of malaria in the duration of this case work. Forty-seven percent (n: 60) patients were available with positive peripheral smear for the parasite of malaria. Out of total 60 patients, eighty-five percent (n: 51) patients were positive for *P. falciparum* and fifteen percent (n: 9) patients were positive for *P. vivax*. Total 70.0% (n: 42) patients were available with thrombocytopenia. There were 76.0% (n: 32) male patients & 24.0% (n: 10) female patients were suffering from thrombocytopenia. Ninety-five percent (n: 40) patients of this complication were the victims of malaria due to *P. falciparum* and only five percent (n: 2) found infections of *P. vivax* parasite of malaria. (Table-1) Seventy percent patients (n: 29) patients were available with mild nature thrombocytopenia; twenty-two percent patients (n: 9) were available with moderate nature of this complication and 8.0% (n: 4) found with severe nature thrombocytopenia. There was not any requirement of the transfusion of the platelets in any patient. The level of hemoglobin was lower than ten g/dl in forty-three percent (n: 18) patients suffering from this complication and all of these patients were the victims of malaria due to *P. falciparum* parasite.

Table -1 : Clinical Findings of Malaria Patients (n=128)

Clinical Characteristics		No	Percent
Positive Smear (n=60)	P.Falciparum	51.0	85.00
	P. Vivax	9.0	15.00
Thrombocytopenia (n=42)	Male	32.0	76.00
	Female	10.0	24.00
	Total	42.0	72.00
	P.Falciparum	39.0	93.00
	P. Vivax	3.0	7.00
	Mild	29.0	70.00
	Moderate	9.0	22.00
	Severe	4.0	8.00



DISCUSSION:

One of the most common reasons of febrile illnesses in this country Pakistan is malaria and medical diagnosis of this disease is very hard. In this complication, hematological anomalies are very frequent. Thrombocytopenia usually happens in 60.0% to 80.0% & anemia in 25.0% [8]. The outcome of thrombocytopenia in addition with anemia is a vital sign to diagnose the disease of malaria in the patients suffering from acute febrile illness [9]. In this current research work, 70.0% patients having disease of malaria displayed some grades of thrombocytopenia. These findings are very much consistent with the results of other case works conducted by other authors

as 71.0% by Robinson [10] & 58.970% concluded by Rodriguez [11].

Thrombocytopenia is very vital predictor of seriousness of malaria due to P. Falciparum among small aged children [12]. Thrombocytopenia in combination with anemia was available in 43.0% patients of this case study population. Bashwari in his research work conducted in Saudi Arabia has concluded the availability of anemia in 60.0% patients and thrombocytopenia in 53.0% patients of this case work [13]. Thrombocytopenia was available in the patients suffering from febrile illness because of viral reasons but its availability is very vital evidence of identification for the presence of malaria in endemic

regions as reported by previous research works [14] and particularly when it has association with the presence of anemia [15]. The patients suffering from febrile illness with no localizing symptoms and with

addition of anemia and thrombocytopenia should make the doctors attentive to treat about the probability of the infection of malaria. The confirmation of this issue is possible with the help of different test.

CONCLUSION:

The results of this research work conclude the high rate of occurrence of mild nature to severe nature thrombocytopenia in the admitted patients getting treatment of malaria in the hospital. *P. falciparum* was the most frequent available specie of parasite present among those patients. The discovery of thrombocytopenia very helpful in the diagnosis because it increases the possibility of malaria especially among the patients getting treatment in hospital for acute febrile illnesses.

REFERENCES:

1. Ali B, Hashmi KZ. Prevalence of malaria among Karachites. Past and Present. Inf Dis J of Pak 1997;4-9.
2. Struchler D. Global epidemiology of malaria. Schlagen halff P (ed). Travellors malaria 2001. BC Decker London, 14-55.
3. Kondrachine AV, Trigg PI. Global overview of malaria. Ind J Med Res 1997; 106: 39-52.
4. World Health Organization. A global strategy for malaria control. Geneva WHO 1993; 30.
5. Bashwari LA, Mandil AM, Bahnassy AA, Alshamsi MA, Bukhari HA. Epidemiological profile of malaria in a university hospital in the eastern region of Saudi Arabia. Saudi Med J 2001; 22(2): 133-8.
6. Richerd MW, Behrens RH. Hematological changes in acute imported Plasmodium malaria. Am J Trop Med Hyg. 98; 59 (6) 859.
7. Mujahid CA, Arif M. Malaria situation in Pakistan to brief on National control programme. Pakistan J Med Res 98, 37(4) 537-9.
8. Kreil A, Wenisch C, Brittenham G. Thrombocytopenia in *P falciparum* malaria. Br J Hematol 2000;109 (3): 534-36.
9. Lathia TB, Joshi R. Can hematological parameters discriminate malaria from nonmalarious acute febrile illness in the tropics? Indian J Med Sci 2004; 58(6): 239-44.
10. Kathryn NS, Kevin C, Jay SK. Malaria CMAJ 2004; 170 (11): 1503-18.
11. Patel U, Gandhi G, Friedman S, Niranjan S. Thrombocytopenia in malaria. J Natl Med Assoc 2004; 96(9):1212-4.
12. Patel U, Gandhi G, Friedman S, Niranjan S. Thrombocytopenia in malaria. J Natl Med Assoc 2004; 96(9): 1212-4.
13. Robinson P, Jenney AW, Tachado M, Yung A, Manitta J, TaylorK et, al. Biggs BA. Imported malaria treated in Melbourn, Australia. J Travel Med 2001; 8(2): 76-81.
14. Rodriguez-Morales AJ, Sanchez E, Vargas M, Piccolo C, Colina R, Arria M. Anemia and Thrombocytopenia in children with *Plasmodium vivax* malaria. J Trop Pediatr. 2005; 10: 1093.
15. Imbert P. Criteria of severity in childhood falciparum malaria. Arch Pediatr. 2003; 10 suppl 5:532s-38s.