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Study of Clinico Hematological Profile and Outcome of Malaria in Adult Patients Admitted in Hamidia

Authors
Dr Ashish Awaya[1], Dr R. S. Jagat[2], Dr T. N. Dubey[3], Dr Nitin Nahar[4]
[1]MPMSU Jabalpur
[2,3,4]BU Bhopal

Abstract
Aim: *to Study of Clinico Hematological Profile and Outcome of Malaria in Adult Patients Admitted in Hamidia'*
Material & Method: *The present study was done in department of medicine, GMC & H. H. Bhopal (MP). In this study 100 patients of Malaria confirmed by peripheral smear or by rapid optimal test underwent detailed clinical history through physical examination and investigated with hematologic and coagulation parameters. Patients with established diagnosis of systemic infection, typhoid fever, dengue fever, pulmonary tuberculosis, HIV-AIDS, and Meningitis were excluded from study.*
Result: *100 patients who had positive for Malaria infection by peripheral smear or by rapid optimal test were included in this study. Out of these 100 patients 50% of P. Falciparum, 43% patients of P. Vivax & 7% patients of mixed infection. Of the 100 patients, fever (100%) was the most commonest presenting symptoms followed by chills and Rigors(77%), 1% patients had severe Anaemia (hb < 5 gm%), 78% patients had moderate Anaemia(5-10gm%). Thrombocytopenia was observed in 66% patients and out of this severe thrombocytopenia (<50000 cumn) was seen in 3% of patients. PT was increased in 12% and S. Billirubin was increased in 5%. Splenomegaly in 17% and hepatomegaly in 7%. The most common system involved in these study was Hematologic system (79%) followed by renal (19%), Hepatic (7%), neurological (3%) and pulmonary system (2%).*
Conclusion: *In this study conclude P. Falciparum Malaria is major challenge and usually presents with involvement of almost all system of body. Therefore, it is vital to know & perform hematologic and biochemical investigation to detect early complications and to treat them effectively*
Keywords: *Malaria, Thrombocyopenia, Anaemia, Leucocytosis, leucopenia.*

Introduction

Malaria is a major Diseases in India & other tropical countries, Approximately 300-500 million peoples worldwide are affected by malaria and each year between 0.23-0.63 million die due to malaria (2015). Through malaria presents as a uncomplicated fever with prompt recovery, It may mimic many systemic illness confounding the treating physician in Individuals with low immunity.

Malaria is febrile illness characteristic by fever & related symptoms but it is often masked by other symptoms like, Jaundice, Seizure, acidosis, hypoglycemia and electrolyte imbalance and many patients with Renal and Hepatic failure.

The present study was undertaken to analyze the various clinical presentation of malaria with their Hematological & biochemical parameters and to correlate the severity & outcome of Diseases.

Objectives

1. To study the incidence of malaria.
2. To study the various typical and atypical presentation of malaria.
3. To study the haemotological & Biochemical derangements of malaria.
4. To study the outcome of treatment of malaria.

Material and Method

This observational study was conducted from july 2015 to June 2016. All patients with acute febrile illness presenting at department of Medicine Gandhi Medical Collage and associate Hamidia Hospital Bhopal were evaluated .

Inclusion Criteria

- All patients proved positive for malaria by peripheral smear or by Rapid optimal test.

Exclusion Criteria

1. Only clinical diagnosis without peripheral smear study or rapid optimal test positive.
2. Already known cases of haematological disease.
3. Patients who test positive for other systemic infection, typhoid fever, denue fever, pulmonary tuberculosis, HIV-AIDS, and Meningitis
4. Patient treated on OPD basis.

Following Investigation Were Done

All patients were investigated with complete blood examination included complete blood counts, peripheral smear examination for malarial parasite, Retic counts, Platelets counts, BT/CT, serum biochemistry, urine microscopy , chest film and USG Abdoman. Other investigations like Blood culture, Urine culture, serology for typhoid were done where indicated.

Peripheral Smear

Two smears were prepared in each case and stained with leishmans stain, Two observers should examine thick films, with each viewing a minimum of 200 high power fields, if films are positive, the species should be determine by thorough examination of thin films

Results

Table – 1 Various Clinical Symptoms of Malaria and Their Incidence

S. NO.	SYMPTOMS	NO. OF CASES	v	f	m
1	Fever	100	43	50	7
2	Chills and Rigors	77	33	38	6
3	- Headache	38	12	22	4
4	- Altered Sensorium	3	1	2	0
5	- Seizures	3	0	1	2
6	- Decreased urine output	10	1	8	1
7	- dark Urine	8	1	5	2
8	- Nausea Vomiting	22	5	13	4
9	Haematological - Bleeding menifistation	3	0	2	1
10	- Jaundice	5	0	4	1
11	- Breathlessness	2	0	1	1
12	diarrhea	10	3	6	1

The above table shows that fever was the most common symptom present in 100% cases, associated with chills and rigors in 77% and headache in 38% of patient

Table – 2 Clinical Signs in Studied Group

S.No.	Signs	No. of patient	v	f	m	%
	On General Examination					
1	Pallor	48	17	26	5	48
2	Icterus	5	0	4	1	5
3	Hyperpyrexia	24	11	11	2	24
	R/S Examination					
4	Hyperventilation	3	0	2	1	3
5	Signs of pneumonia	0				0
6	ARDS like picture	2		1	1	2
	CVS Examination					
7	Shock	9	2	6	1	9
8	Sinus tachycardia	56	22	31	5	56
9	Haemic murmur	0				0
	P/A Examination					
10	Hepatomegaly	7	4	2	1	7
11	Splenomegaly	17	7	9	1	17
12	Hepato Splenomegaly	4	0	3	1	4
	Renal					
12	Oliguria	10	1	8	1	10
13	Dark Uri ne	7	1	5	1	7
	Hematological					
14	- Bleeding manifestations	3	0	2	1	5

Table – 3 Frequencies of Involvement of Various Systems in Malaria

S. no.	System Involvement	% age
1	Haematological System	79
2	Neurological System	3
3	Renal System	19
4	Hepatic System	7
5	Cardiovascular System	0
6	Pulmonary System	2

The above table shows that most common system to be involved in malaria was hematological system (79%) followed by renal system.

Table -4 Relative Frequencies of Severity (As Per Who Guidelines)

Relative frequencies of severity (as per WHO guidelines)				v	f	m
S.no.	Complications	No. of cases	%			
1	Cerebral malaria (Coma/ impaired cause) not attributable to any other cause	3	3	1	2	0
2	S.Anemia (Hb<5 gm%)	1	1	0	1	0
3	Oliguria or S. creatinine>3mg/dl	10	10	1	8	1
4	ARDS	2	2	0	1	1
6	Shock(Sys BP<80 mmHg)	9	9	2	6	1

7	Bleeding manifestation	3	3	0	2	1
8	GTCS (>2in 24 hours)	3	3	0	1	2
9	Hemoglobinnuria	1	1	0	1	0
10	Hyperparasetemia (3+ or more)	21	21	11	9	1
11	Hyperpyrexia	24	24	11	11	2
12	Extreme weakness without neurological cause	1	1	0	1	0
13	Jaundice (T.bil >3 mg/DL)	5	5	0	4	1

Discussion

A prospective study was carried out in the department of Medicine, Gandhi Medical College and associated Hamidia Hospital, Bhopal to study the myriads of clinical presentation & complication and biochemical and hematological variations of malaria.

A total of 100 patients fulfilling the inclusion criteria were evaluated & entered on specially designed proforma. Their peripheral smears were studied, based on which the diagnosis was confirmed.

At total number of 734 cases of pyrexial illnesses were admitted during the study period of which 328 patients (43%) were clinically diagnosed and treated as malaria. 132 patients (18.89%) had positive peripheral smear.

- P.falciparum infection was present in 55.55%, P.vivax in 32.15%, and mixed infection in 12.35%.
- 58% (F-27%,V-25%,M-6%) males & 42% (F-25%,V-16%,M-1%) female were suffe-rers. Maximum incidence was observed in age group 12-30 years i.e. 63%.
- Maximum cases (89%) were observed in the period of July, Aug., Sept, Oct, Nov, and Dec.
- Fever was the commonest presenting symptom present in 100% (F-50%,V-43%,M-7%) followed by chills & rigors in 77%(F-38%,V-33%,M-7%), headache in 38%(F-22%,V-12%,M-4%), vomiting in 22%(F-13%,V-5%,M-4%), altered sensorium in 3(F-2%,V-1%,M-0%) %, yellow discoloration of urine & sclera in 5%, decreased urine output in 10%(F-8%,V-1%,M-1%), seizures in 3%, bleeding, manifestations in 3% (F-2%,V-0%,M-1%) patients.
- Incidence of complication increased with the duration & grade of fever. 76% (11 out of 76 patients) patients with complications had fever ration >3 days. 76% with high grade fever had 1 or more systemic complication.
- Irregular pattern of fever was observed in 55%(F-49%,V-5%,M-1%) patients, 43% (F-0%,V-43%,M-1%) patients had interm-itent pattern of fever and 2% had continuous fever.
- On general examination 48%(F-26%, V-17%,M-5%) patients had pallor, 5%(F-4%,V-0%,M-1%) had icterus. On R/S examination 2% had signs of hyperve-ntilation, while 1% had ARDS like picture. On cvs examination sinus tachycardia was present in 56%(F-22%,V-31%,M-5%).
- Hepatomegaly was clinically evident in 7%(F-2%,V-4%,M-1%), spleenomegaly in 17% (F-9%,V-7%,M-1%) while both hepatospelenomegaly in 6% (F-3%,V-02%,M-1%).10%(F-8%,V-1%,M-1%) had decreased urine output with 10% having oliguria, 1% patients had of haemoglob-inuria. 3% had bleeding manifestation.
- On neurological examination 3% (F-2%,V-1%,M-0%) patients had altered sensorium of which 1 were stuporous, 2 drowsy 6%. patients had increased tone & 3% had decreased tone. weakness was observed in 1 patients.

Hypoglycemia was observed in 8 patients (8%)(F-5%,V-2%,M-1%)

1% patients had Hb% <5 gm%; 78% had Hb% between 5-10 gm%.

8% patients had TLC > 11000/cumm while 22% <4000/cumm.

19% patients had deranged S. Creatinine, while 20% had deranged blood urea. Maximum urea was 108 mg% maximum and maximum creatinine was 2.5mg/dl.

S.Bilirubin was raised in 5%(F-4%,V-0%,M-1%) patients. Raised SGOT & SGPT were observed in 6% & 6% respectively while 12% had increased prothmobin time values.

Urine routine & microscopic examination showed albumin in 18% (F-7%,V-2%,M-4%) & Hemoglobinuria 1% 66% (F-31%,V-26%,M-6%) patients had platelet counts <1.5 lacs. X- ray chest showed and ARDS like picture in 1 patients.

USG abdomen demonstrated splenomegaly in 17% (F-9%,V-7%,M-1%), hepatomegaly in 7% (F-2%, V-4%,M-1%), both hepatosplenomegaly in 9%, 12 patients had evidence of acute renal parenchyma disease.

C.S.F. analysis was done in 3 patients,, opening pressure was raised in 1 patients, Glucose was normal in all. 2 patients had proteins in range of 50-60 mg/dl. Counts were normal in all patients.

Most patients in our study received combination therapy. Artimisinin derivatives were used in 100%, & Doxycycline in 100% patients either alone or in combination with each other.

Conclusion

Pl. falciparum malaria is a major challenge, especially because its incidence is more than incidence of Pl. vivax malaria. malaria is a febrile illness, but not a simple disease of fever with chills. It usually presents with complications in tertiary hospitals. Pl. falciparum malaria involves almost all systems of the body, from neurological to renal to hepatic to hematological to cardiovascular and respiratory system. Another point noticed is that mortality of patients is more in patients having multi organ dysfunction. So malaria can present with varied and dramatic manifestations, such that it can be considered in differential diagnosis of almost all clinical problems -Malaria is a great imitator and trickster, particularly in areas like India where it is endemic. Therefore early, diagnosis and proper treatment of this problem requires utmost importance.

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