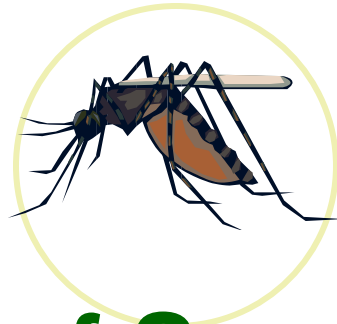
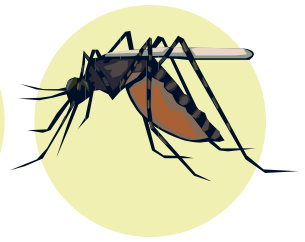
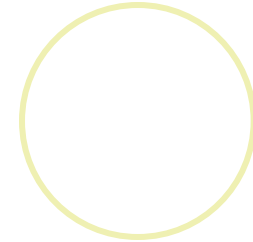
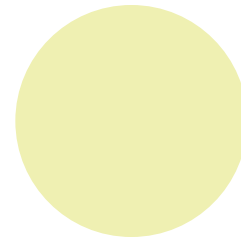


Dr. Md. AMIR HOSSAIN
Department of Medicine
Rangamati General Hospital
Deputed to BSMMU, Dhaka.



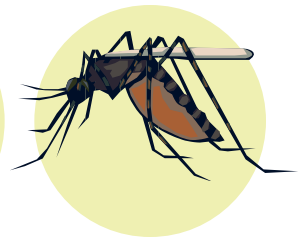
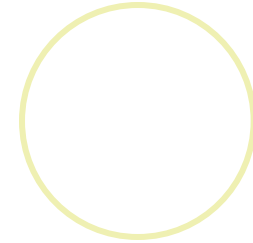
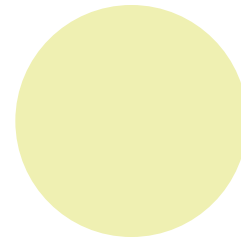
Outcome of Severe Malaria in Endemic Zone - Study From a District Hospital of Bangladesh

INTRODUCTION



- In Bangladesh malaria is one of the important causes of morbidity and mortality. Hill tracts and areas near hill tracts are endemic for malaria.
- Presentation of malaria, especially severe *falciparum* malaria (SM) has been changed and often it can lead to a dreadful complication like cerebral malaria.
- Clinicians should be aware of the atypical presentations and modifications of physical findings due to inadequate chemotherapy and associated other infections.

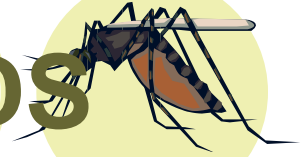
OBJECTIVES:



This study was designed

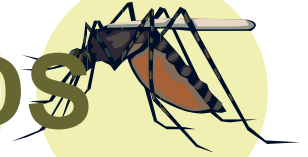
- (a) to find out the variations in the clinical presentations of SM
- (b) to observe the outcomes of the patients in a district hospital of endemic zone.

MATERIALS AND METHODS



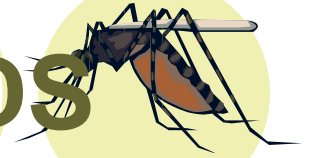
- Patients got himself admitted in the Medicine Unit of Rangamati General Hospital with high fever, altered level of consciousness, abnormal behavior, convulsion, severe anaemia, jaundice, oliguria, severe vomiting leading to non per os, severe prostration and other features of severity were evaluated from July 2006- June 2007.
- We enrolled only those patients who were *P. falciparum* positive on blood smear examination (BSE) or positive rapid diagnostic test for falciparum malaria.

MATERIALS AND METHODS



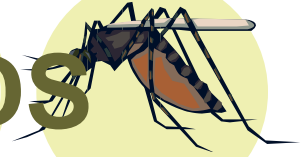
- Thick and thin films were made in the same slide from blood obtained by finger prick at the peak of the temperature, which were stained with Giemsa's stain. A thick film was considered negative when examination of 100 fields failed to reveal any asexual forms of parasites
- Parasitaemia was quantified by counting the number of parasite in 100 fields of thick blood film. The blood films were examined by a pathologist in all the cases and by 2 separate pathologists in doubtful cases.
- Fundoscopic examination was done in every patient after proper dilatation of pupil by tropicamide.

MATERIALS AND METHODS



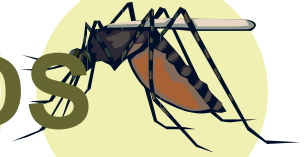
- Hematological profile like Hb%, total and differential count of W.B.C., E.S.R, urine R/E, s. creatinine, s. bilirubin, SGPT, chest X-ray, and blood glucose level were done according to clinical condition of the patients.
- In patients with suspected cerebral malaria, C.S.F. was studied. Patient having *P.falciparum* in peripheral blood films and exhibiting central nervous system signs of coma, convulsions, delirium or confusions were classified as cerebral malaria if no other underlying cause for these conditions could be observed.

MATERIALS AND METHODS



- Those with black water fever; urine test for hemoglobinuria was done.
- All patients were treated with Quinine-dihydrochloride perenterally up to the patients' ability to take orally.
- In some seriously ill patient Quinine was administered perenterally throughout the total length of treatment. Patients were followed up daily about their improvements or deterioration.

MATERIALS AND METHODS



- Quinine was administered along with antibiotics like Doxycycline, Ciprofloxacin, Cotrimoxazole, Ceftriaxone in some cases as an adjuvant therapy or when there was associated other infections.
- At the day of discharge on 7th or 8th day all patients were clinically evaluated for any complications and BSE was done to see whether the patient was parasitologically cured or not.
- Most patients were evaluated after 4 weeks of discharge up to 5th week to see relapse, recrudescence or persistence of any complications.

RESULTS

- Fifty patients completed the total course of treatment.
- Out of them 90% were male, 10% female.
- Young adults (82%) were mostly affected.
- Police (28%) and Boatman (26%) were found to be affected preponderantly in this series.

Age and Sex distribution of 50 severe *falciparum* malaria cases.



Age group (in years)	Male (%)	Female (%)	Total
≤20	2 (4)	1 (2)	3
21-30	25 (50)	3 (6)	28
31-40	12 (24)	1 (2)	13
41-50	4 (8)	0 (0)	4
Above 50	2 (4)	0 (0)	2
≤20-50+	Total 45 (90)	Total 5 (10)	50

Age distribution of the patient.

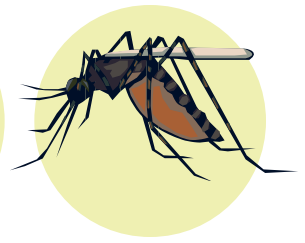
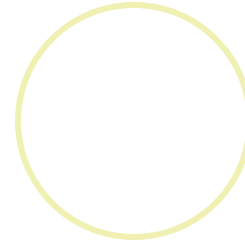
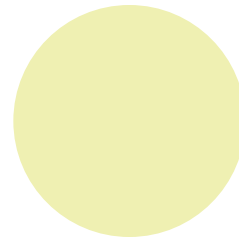
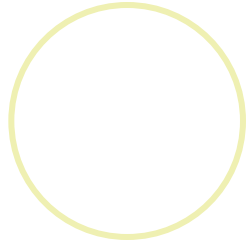
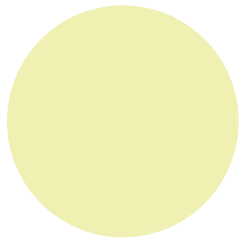


Age group (in years)	No. of patients	Percentage (%)
11-20	3	6
21-30	28	56
31-40	13	26
41-50	4	8
Above 50	2	4

Occupational variations among severe malaria patients



Occupation	No. of patients	Percentage (%)
Day-laborer	1	6
Housewife	3	6
Service	6	12
Boatman	13	26
Police	14	28
Student	4	8
Business	8	16
Others	1	2

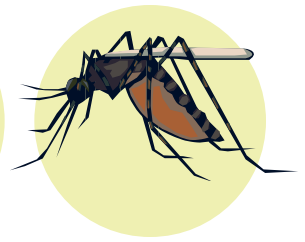
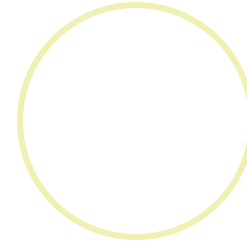
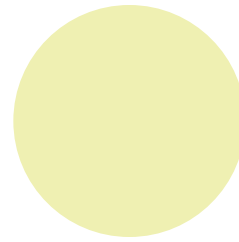
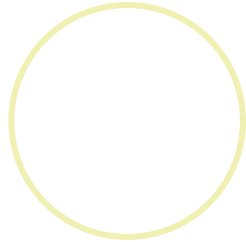
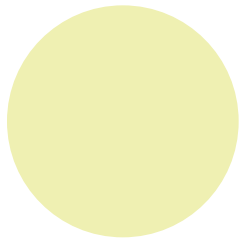


**Higher prevalence was observed
during the month of July to
September (46%)**

Number of patient in respect of time of year.



Month	Number of patients	Percentage%
July	6	12
August	4	8
September	13	26
October	5	10
November	4	8
December	1	2
January	1	2
February	0	0
March	1	2
April	2	4
May	6	12
June	7	14



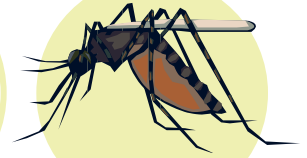
Commonest clinical features of these patients were fever.

Intermittent pattern of fever documented in 26% (13) of cases.

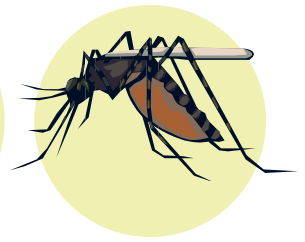
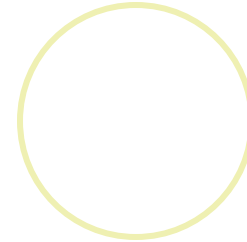
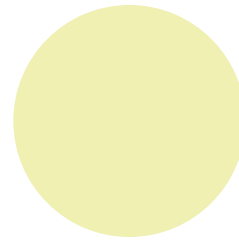
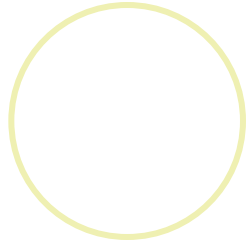
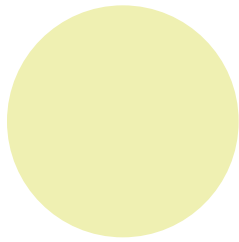
Vomiting was found in 60%, altered level of consciousness in 34%, loose motion in 10%, convulsion in 02% and passage of dark urine in one patient.

No patient was found to be hypothermic.

Presenting symptoms



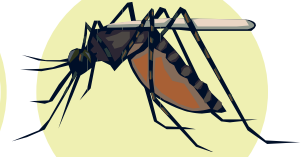
Symptoms	Number of patients	Percentage
Fever	50	100
Remittent	24	48
Intermittent	13	26
Continued	7	14
Irregular	6	12
Altered level of consciousness	17	34
Vomiting	30	60
Bleeding manifestation	1	2
Convulsion	1	2
Passage of dark urine	1	2
Loose motion	5	10
Hypothermia	0	0



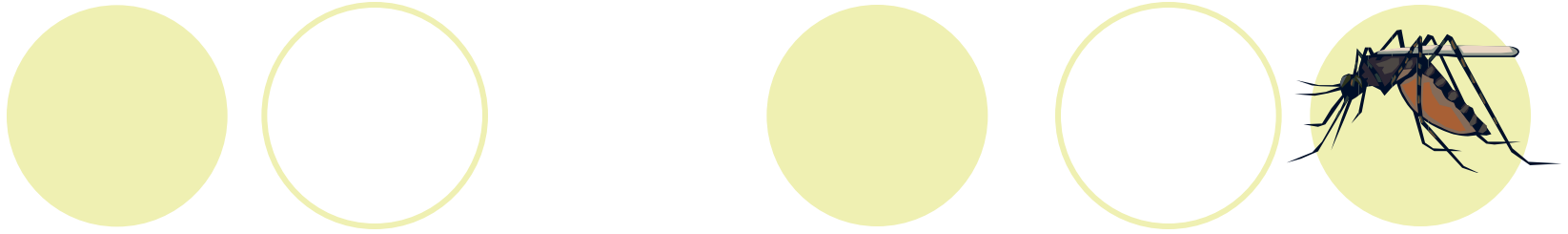
Important signs:

Anaemia (42%), low BP (24%),
splenomegaly (22%),
jaundice (18%), Oliguria (16%)
hepatomegaly (10%),
hepato-splenomegaly (08%)

Presenting Signs



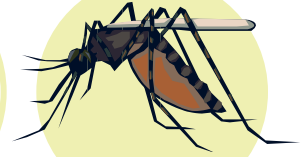
Signs	Number of patients	Percentage%
Tachycardia	39	78
Anemia	21	42
Hypotension	12	24
Hepatomegaly	5	10
Splenomegaly	11	22
Hepatosplenomegaly	4	8
Jaundice	9	18
Oliguria	8	16
Skin rash	1	2



Anaemia was documented in 21 patients

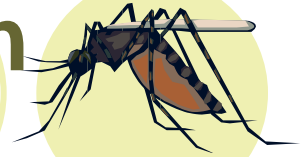
29 patients (58%) were with normal *hemoglobin* content (Hb.>11 gm/dL).

Hemoglobin value



Hemoglobin value	Number of patients	Percentage (%)
<5	1	2
5-8	9	18
8-11	11	22
Above 11	29	58

Count of malarial parasite on admission



No. of parasite	Number of patients	Percentage
Up to 500/cu.mm	4	8
501- 1000/cu.mm	8	16
1001- 5000/cu.mm	19	38
5001-50000/cu.mm	15	30
Infinity	4	8

Four patients (8%) showed an evidence of retinal haemorrhage

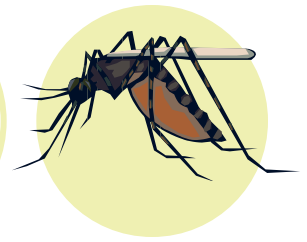
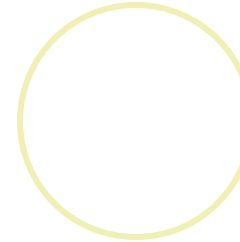
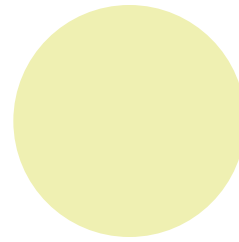
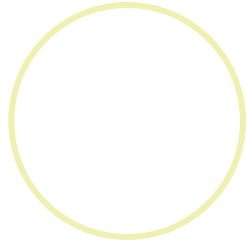
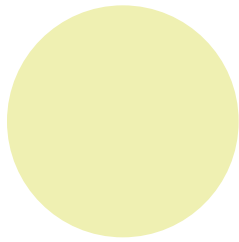


Fundoscopy findings	No. of Patients	Percentages (%)
Normal	46	92
Retinal haemorrhage	4	8
'Cotton wool' spots	0	0
Papilloedema	0	0
Retinal whitening/oedema	0	0
Retinal vessel abnormality	0	0

Antibiotics (Cotrimoxazole, Ciprofloxacin, Ceftriaxone etc.) were used in 12 (24%) and 38 patients (76%) did not receive any antibiotic.



Name of Antibiotic	No. of Patients	Percentage%
Cotrimoxazole	1	2
Ciprofloxacin	3	6
Ceftriaxone	3	6
Doxycycline	5	10
No antibiotic	38	76



48 (96%) patients cured uneventfully

2 (4%) patients died

62% of the patients were reported on the 4th to 5th week of which

5 (10%) patients were found febrile.

BSE reveals positivity in 2(4%) cases

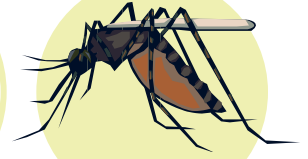
Cured patients showed no residual neurological or other sequelae.

Outcome of severe malaria patients



Outcomes	No. of Patients	Percentage%
Cured uneventfully	48	96
Cured with sequelae	0	0
Death	2	4

Conclusion:



- Typical paroxysmal nature of fever may not be present in SM.
- Severe malaria might present with complications in the very early period of evolution of the disease and some of which may be life threatening.
- Clinical suspicion of malaria in endemic areas along with positive blood slides or positive RDT should be the guideline for prompt treatment of severe *falciparum* malaria.
- Early and effective treatment might save many young lives and might prevent serious consequences from complicated malaria.
- No residual neurological or other deficit was observed in this series.



THANKS
FOR YOUR
KIND
ATTENTION