

The background of the slide is a microscopic image of numerous red blood cells, appearing as pinkish-purple spheres with some internal structure visible. The cells are densely packed and fill the entire frame.

National Policy for Malaria Management

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Quiz



activate your
mind

1. Are there **vaccine** for malaria ??
2. Are there **Alternative** medicine other than chemotherapy ??
3. Drug of choice in **high parasitemia** ??
4. What is **the best** drug for simple malaria ??
5. What the prescription for ***P. Malariae malaria*** must contain ??
6. Why the mosquito flies **near face** ??
7. Can malaria affects **animals** ??

Objectives

- Case definitions
- **National Anti-malarial policy**
- Hints on important aspects
 - endemicity
 - Lab tests
 - scattered information
- Special conditions and Malaria
- Some Update

Simple Malaria ;Case definition

- Patient with **fever** or history of fever within the past 48 hours (with or without other symptoms such as nausea, vomiting and diarrhea, headache, back pain, chills, myalgia)
- in whom other **obvious causes** of fever have been excluded.
- Confirmed by malaria blood **film** or **other** diagnostic test for malaria parasites.

Severe Malaria ; case definition

- - In patient with *P.faciparum* asexual parasitaemia and no other obvious cause of their symptoms- the presence of **one or more** of the following clinical or laboratory features classifies the patient as suffering from severe malaria:

Clinical manifestations:

- -prostration
- -impaired consciousness
- -respiratory distress (acidotic breathing)
- -multiple convulsion
- -circulatory collapse

Severe Malaria ;case definition- .cont

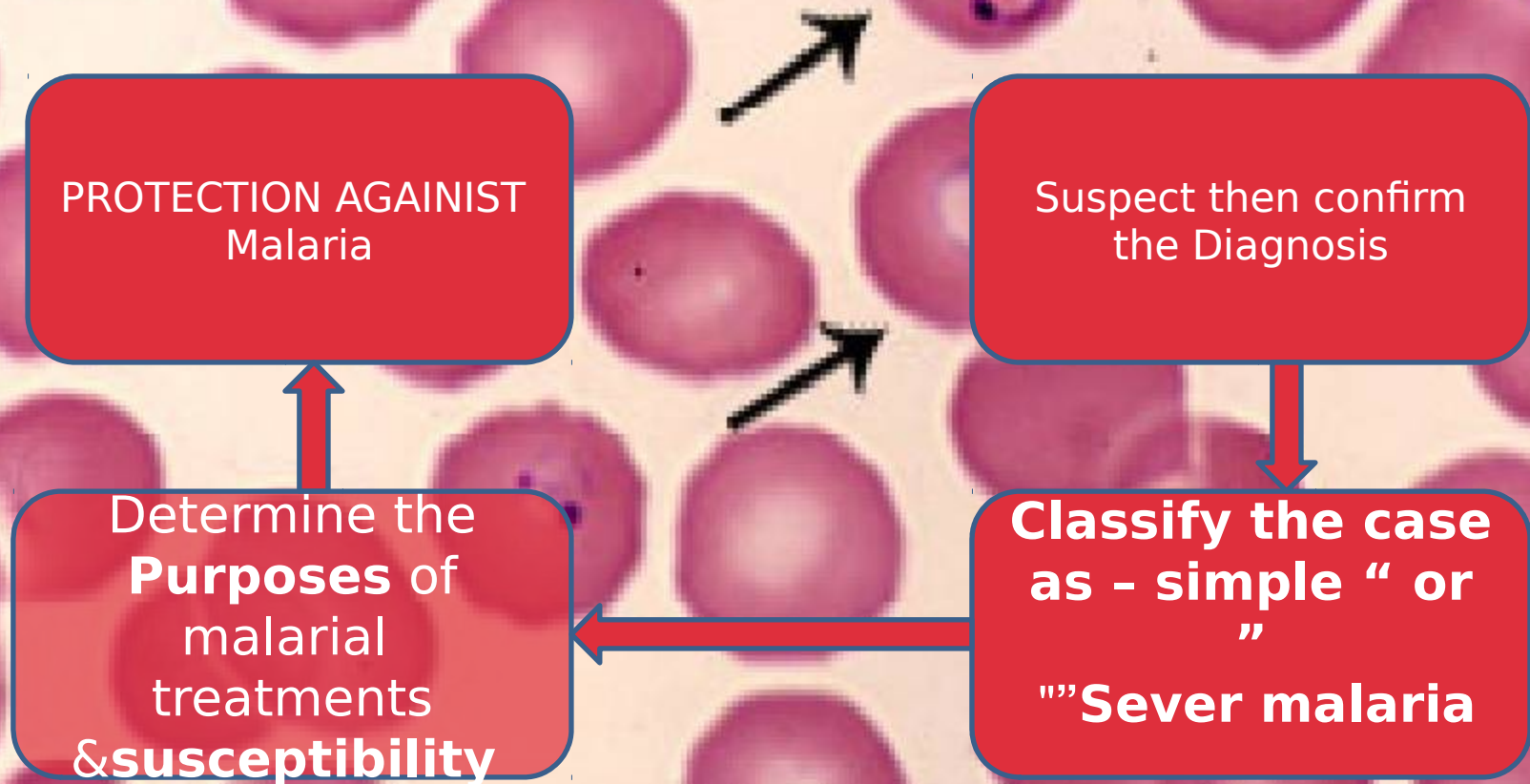
- pulmonary oedema
- abnormal bleeding
- jaundice
- hemoglobinuria

Laboratory detected manifestation:

- severe anemia (<7)
- hypoglycemia
- acidosis
- renal impairment
- hyperlactataemia
- Hyperparasitaemia >5%



THE NATIONAL POLICY



Simple(uncomplicated) Malaria

CASE
DEFINATION

TREATMENT
OF
FALCIPARUM

TREATMEN
non OF T
falciparum.

Second
line
treatment

First line
treatme
nt

Purposes of "Antimalarial Drug Policy"

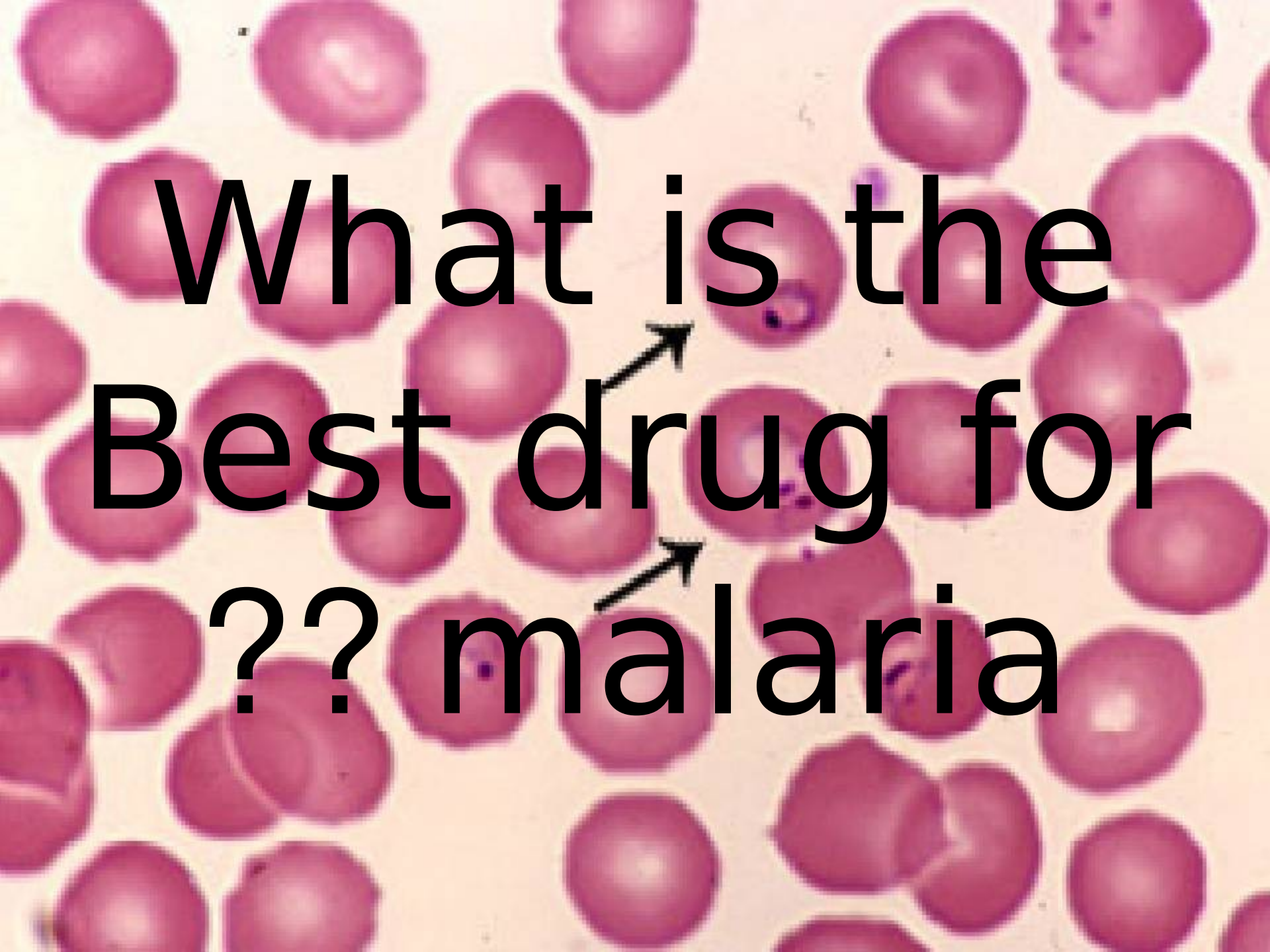
- **Primary purpose:**

1. *In simple malaria:*

1- cure by **optimal** regimen and prevent the **progression** to severe disease and prevent additional **morbidity** associated with treatment failure.

2. *In severe malaria:* To prevent **death** (then as above)

- **Secondary purpose:** To prevent the emergence and spread of **resistance** to antimalarials.

A microscopic view of numerous red blood cells, many of which contain malaria parasites (plasmodia) in various stages of development. The parasites are visible as small, purple-stained structures within the cells.

What is the
Best drug for
?? malaria

Simple 'uncomplicated' Malaria plasmodium falciparum

- First line

treatment(**3days**)

- The total recommended treatment is
 - **4**mg/kg body weight of **Artesunate** given once a day for 3 days, and
 - a single administration of **Fansidar** (P**1.25**/S 25mg/kg) in the first day.

Age (years)	Artesunate 50mg tablet (\approx 4mg/kg/dose)			SULFADOXINE PYRIMETHAMINE(500/25) (1.25mg/kg/dose PYRIMETHAMINE)
	DAY 1	DAY 2	DAY 3	DAY 1
	INFANTS	1/2	1/2	1/2
\geq 1-6	1	1	1	1
\geq 7-13	2	2	2	2
\geq 13	4	4	4	3

Artesunate 50 or 100 and Fansidar (p 25-s 500)

Simple 'uncomplicated' Malaria *plasmodium falciparum*

- Second line treatment (3days):
 - 1- ***can't tolerate*** ^{1st} *line* or ***allergic***
 - 2- **still sick** after 72 hours, or
 - 3- malaria diagnosis is confirmed,
within 14 days of initial treatment.

artemether /

lumefantrine combin

Artemether(A) +Lumefantri ne(L) per dose	tablets per dose(at 0h, 8h, 24h,36h,48h, 60h)	Age in year	Weight (kg)
	Not recommend ed		<5
20mg A +120mgL	1	<3	5-14
40mg A +240mgL	2	>=3- 8	15-24
60mg A +360mgL	3	>=8- 14	25-34

each
tablet
contain
**artemeth
er 20mg**
and
**lumefant
rine**

Severe 'complicated' Malaria *plasmodium falciparum*

- ABCD and APLS
weight the patient, put iv line, send blood sample for Lab (CBC, smear, RFT, bleeding profile, grouping and cross-matching, s.lactate, VBG, & B.culture)
- A detailed clinical examination (include L.O.C)
- LP for unconscious pt .
- rehydration , \pm blood transfusion

Management Severe 'complicated' Malaria plasmodium falciparum

- quinine i.v
(or im-thigh- if iv. not possible and
no alternatives are available) ,
- or
- artemether i.m

- **Dose of quinine** for children:
loading dose : 20mg of salt/kg by **IVI** over 4 hours, **maintenance** dose : 10mg salt/kg over 2 hrs **BD** until the patient can swallow,
- then quinine tablets, 10mg salt/kg, 8 hourly to complete 7-days course,
- or quinine IV given for at least 3 days and then shift to first line(AS+S/P)if the patient can swallow.

- **Artemether** i.m. dosing :
loading : 3.2mg/kg (2DD 12hrs apart) in the first day
maintenance : 1.6mg/kg daily for the next 6 days
or for 3 days then 1st line ttt for 3 days

***Severe malaria
in remote public health units***

- **Rectal Artesunate : (50 or 200mg per recto cap)
10mg/kg , can be repeated after 24hrs**

MANAGEMENT OF COMPLICATION

:Coma(cerebral malaria)

Maintain airway, place patient on his or her side, exclude other treatable causes of coma

avoid harmful ancillary treatment);e.g.hypoglycaemia,bacterial meningitis(such as

.Corticosteroid, heparin and adrenaline;intubate if necessary

:Hyperpyrexia

Administer tepid sponging,fanning,cooling blanket and antipyretic .drugs

:Convulsion

Maintain airway; treat promptly with intravenous or rectal diazepam or intramuscular

.Paraldehyde

:Hypoglycemia

Check blood glucose, correct hypoglycemia and maintain with glucose-containing infusion

:Severe anemia

Transfuse with screened fresh whole blood

Acute pulmonary edema



:Acute renal failure

Exclude pre-renal causes, check fluid balance and urinary sodium; if in established renal failure add haemofiltration or haemodialysis, or if unavailable, peritoneal dialysis.

The Benefits of diuretics/dopamine in acute renal failure are not proven

:Spontaneous bleeding and coagulopathy

Transfuse with screened fresh whole blood (cryoprecipitate, fresh frozen plasma and platelet if available); give vitamin K injection

:Metabolic acidosis

Exclude or treat hypoglycaemia, hypovolemia and septicemia. If severe add haemofiltration Or haemodialysis

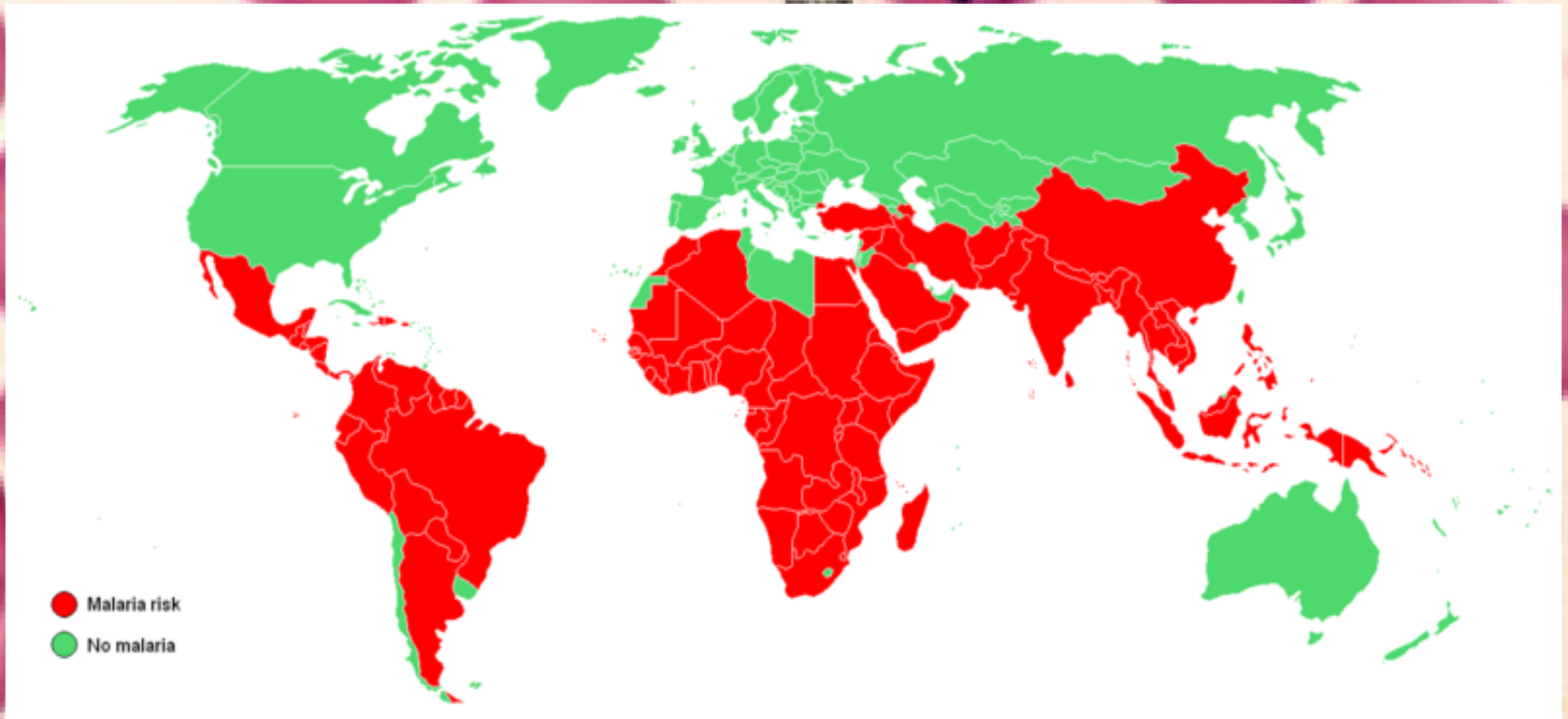
:Shock

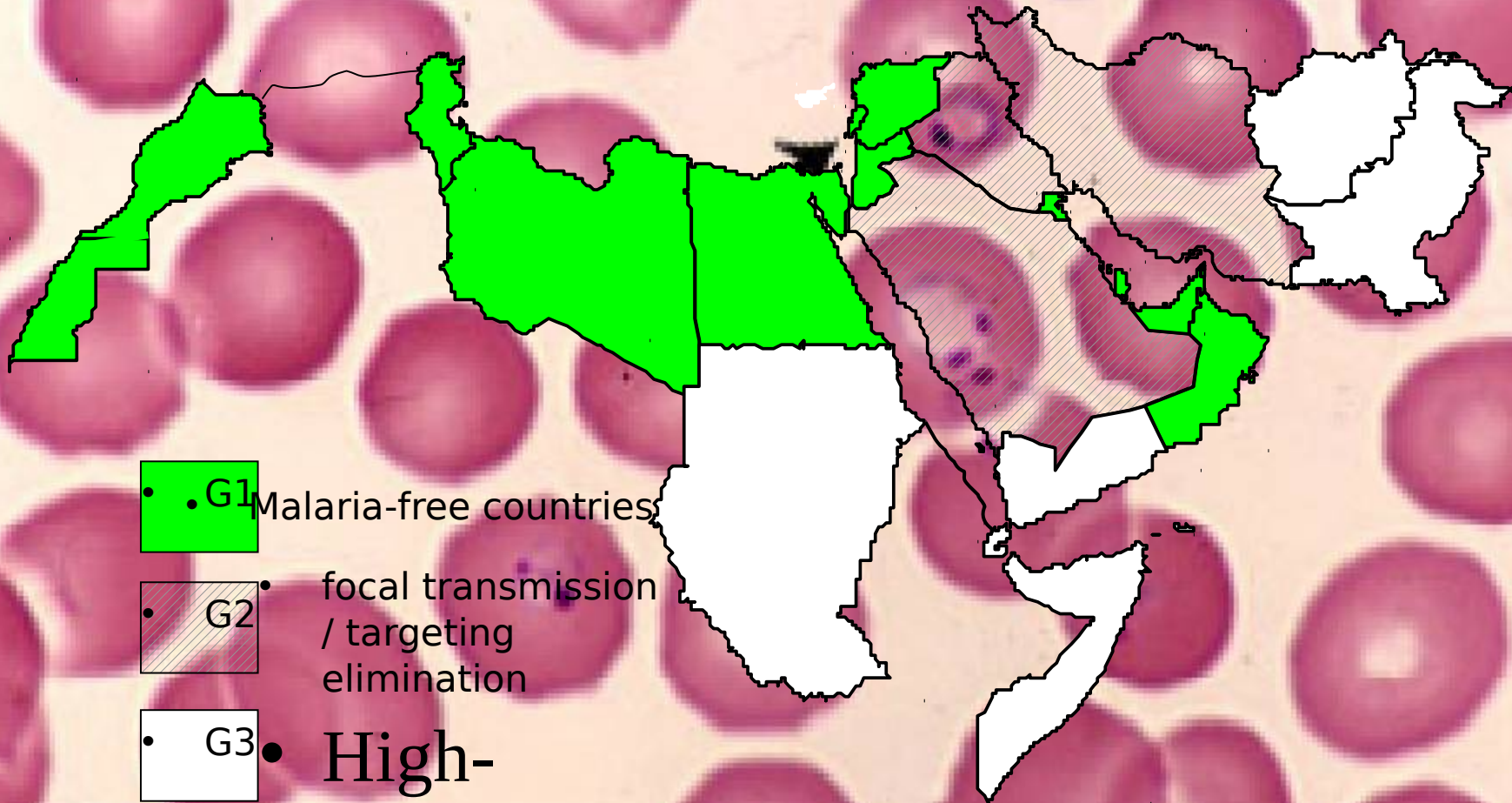
Suspect septicemia, take blood for cultures; give parenteral antimicrobials, correct hemodynamic disturbances

Hyperparasitaemia (e.g. >10% of circulating erythrocytes parasitized in non-immune patients

Hints on important aspects

- Endemicity





• G1 Malaria-free countries

• G2 focal transmission / targeting elimination

• G3 High-burden countries

Endemicity

- Measured by :
 - 1- parasites rate
 - 2- spleen rate
- NB : about 50% of PF malaria in Yemen is chloroquine resistance malaria

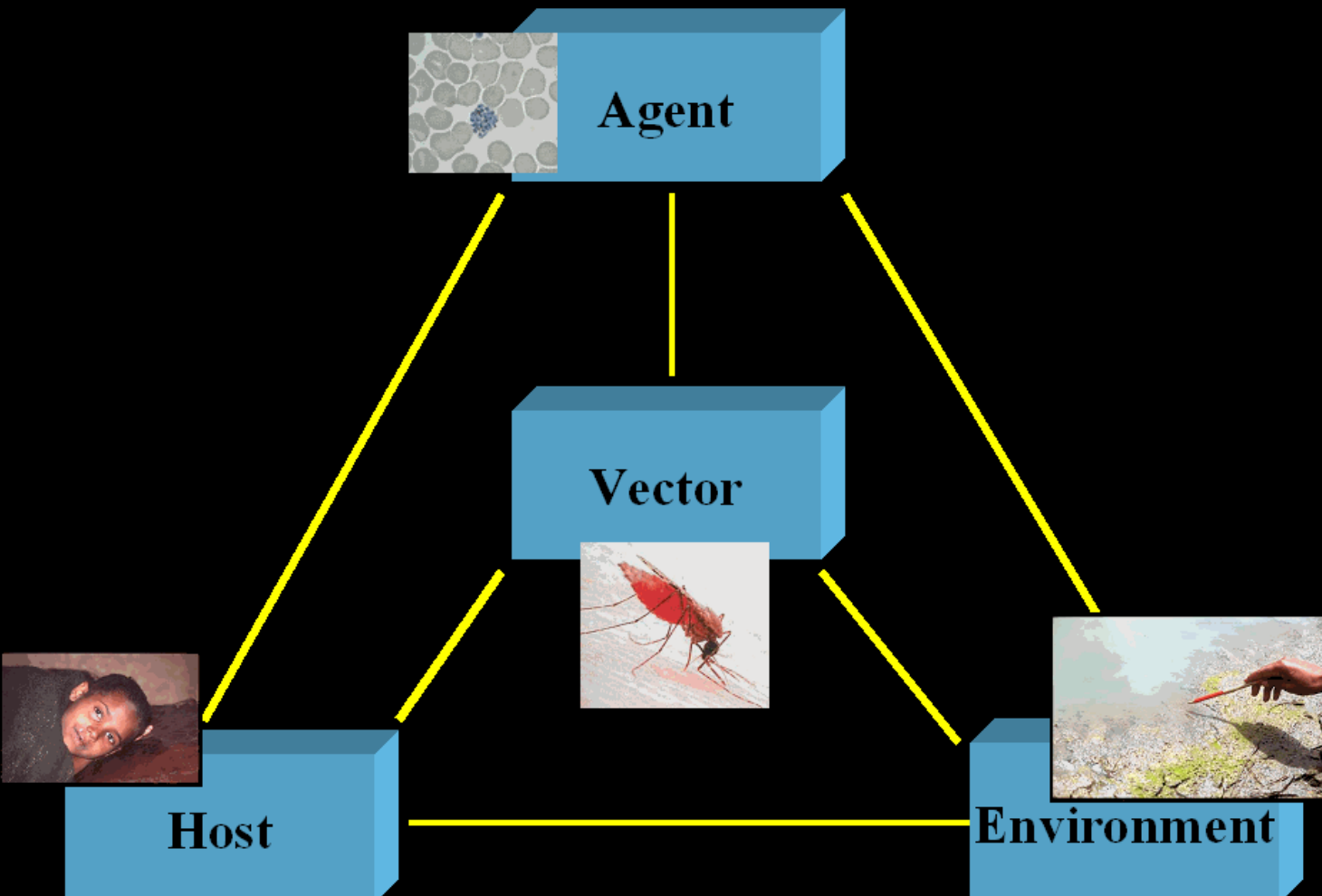
Lab Tests

- Blood film :
 - thick film
 - thin film
- RDT (malaria antigens)
- Experimental : PCR, DNA probe, r-RNA

Confirm DX **Vs** extreme
circumstances

Protection /prevention

Factors involved in the Natural History of Disease



Protection /prevention

- Against **vector** : Insecticide Treated Blankets /sheets/cloths ..., repellents , spraying,
- **Environmental** control: spraying, cover the water lacks , biological larvacides(small fishes)
- **Host** factors : chemoprophylaxis, treatment of actual case ,



chemoprophylaxis

- mefloquine in Yemen;
- **Doxycycline** (can be used if mefloquine is contraindicated).

Mefloquine may be used as therapeutic option but a rare but potentially severe neuropsychiatric reactions when used at treatment doses.

Mefloquin

DOSAGE REGIMEN	<i>5mg/kg weekly</i>
DURATION OF PROPHYLAXIS	<i>Start at least 1 week (preferably 2-3 weeks) before departure and continue for 4 weeks after return</i>
COMMENTS	<p><i>Not recommended under 5kg because of lack of data.</i></p> <p><i>Do not give mefloquine within 12 hours of quinine.</i></p> <p><i>Mefloquine and Other cardioactive drugs may be given concomitantly only under close medical supervision. Ampicillin tetracycline and metoclopramide can increase mefloquine blood levels. Vaccination with live bacterial vaccine (e.g. oral live typhoid vaccine, cholera</i></p>

Use of Doxycycline

<i>DOSAGE OF</i>	<i>1.5 MG SALT/kg DAILY</i>
<i>REGIMEN</i>	
<i>DURATION OF PROPHYLAXIS</i>	<i>Start 1 day before departure and continue for 4 weeks after return</i>
<i>COMMENT</i>	<i>Contraindicated under 8 years of age , may cause photosensitivity ,</i>

The background of the slide is a microscopic image of numerous red blood cells. Many of these cells contain small, purple-stained parasites, which are characteristic of malaria. The parasites are visible as distinct, dark purple spots within the lighter-colored red blood cells.

Treatment of non falciparum malaria

Vivax and ovale malaria cases:

- **Chloroquine** as a schizonticidal drug in a dose of 10mg/kg at the first and second days and then 5mg/kg at the third day.
- **Primaquine** as an anti-relapse measure
 - 0.25mg/kg daily for 14 days
 - or 0.75mg/kg weekly for 8 weeks in G6PD def

Primaquine is **contraindicated** in children under 1 year **and** in pregnant women.

Vivax and ovale malaria cases:

	<1 year (<10 kg)	1-<4 year (10-<17kg)	4-<19year (17-<30kg)	10-<15year (30-<45kg)	15years+ (45kg+)
1st day: Chloroquine	1/2table t Or 1 1/2TSF	1 tablet or 3TSF	2 tablets	3 tablets	4 tablets
2nd day: CQ	1/2table t Or 1 1/2TSF	1 tablets or 3 TSF	2 tablets	3 tablets	4 tablets
3RD DAY: CQ	1/3table t or 1 TSF	1/2 tablets or 1 1/2 TSF	1 tablets	1 1/2tablet	2 tablets
PQ for antirelapse	nothing	1/2 tab	1 tab	1 1/2	2

Malariae malaria cases:

- **Chloroquine** as a schizonticidal drug as mentioned for *P.vivax*.
- **Primaquine** as gametocidal drug in a **single** dose of 0.75mg/kg following the chloroquine course.

The dose per age-group is 3 times the amount indicated in the table above of daily doses for radical treatment of *P.vivax*.

Malaria in pregnancy



Malaria in pregnancy

Drug of choice	Trimester	
Quinine PO(Q8hrs) for 7days	1 st trimester	Simple Malaria
As above + fansidar	2 nd & 3 rd Tri	
Quinine iv for 7days	1 st trimester	Severe Malaria
Artemether im for 7 days To avoid hypoglycemia	2 nd & 3 rd Tri	

Some Up to date

- Malaria vaccine
- Exchange transfusion
when parasitemia exceeds **10%** or if there is evidence of **complications** (eg, cerebral malaria) at lower parasite densities.

What about initial Quiz

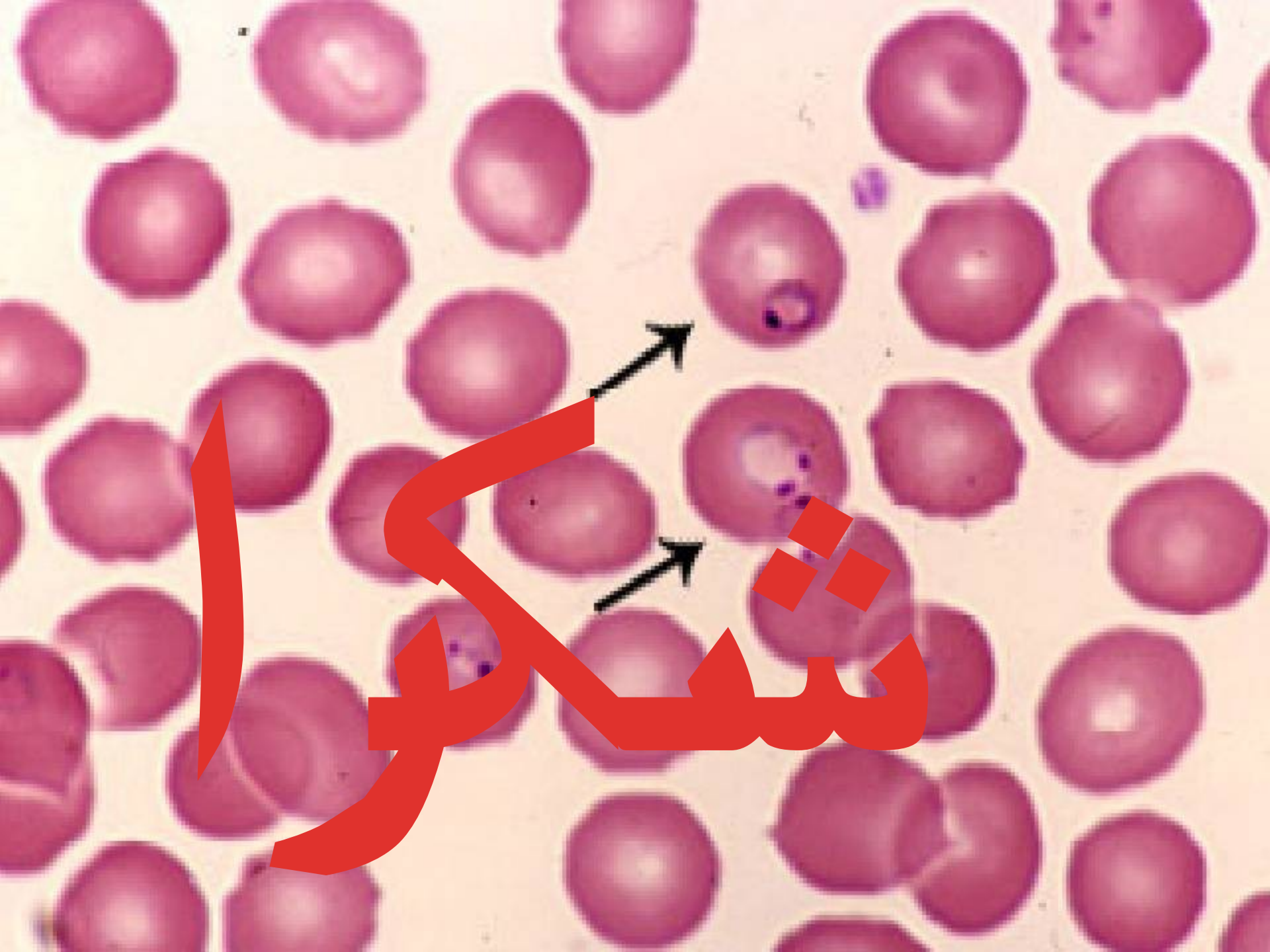
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4. What is the best drug for malaria ??
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6. Why the mosquito flies near face ??
7. Can malaria affects animals ??
8. What about Halofantrine ??
9. What is *Plasmodium knowlesi* ??

References

- National policy of antimalarial drugs
 - Nelson
 - Red book
 - Internet : Emedicine , Pubmed
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اليوم العالمي للملاريا 25 إبريل





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