Dr Nick BEECHING

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52 year old woman with fever, dyspnoea and headache after holiday in Goa in Nov 2006

Travelled with husband for 14 days

Air conditioned hotel in Candolim last 2 weeks of October 2006

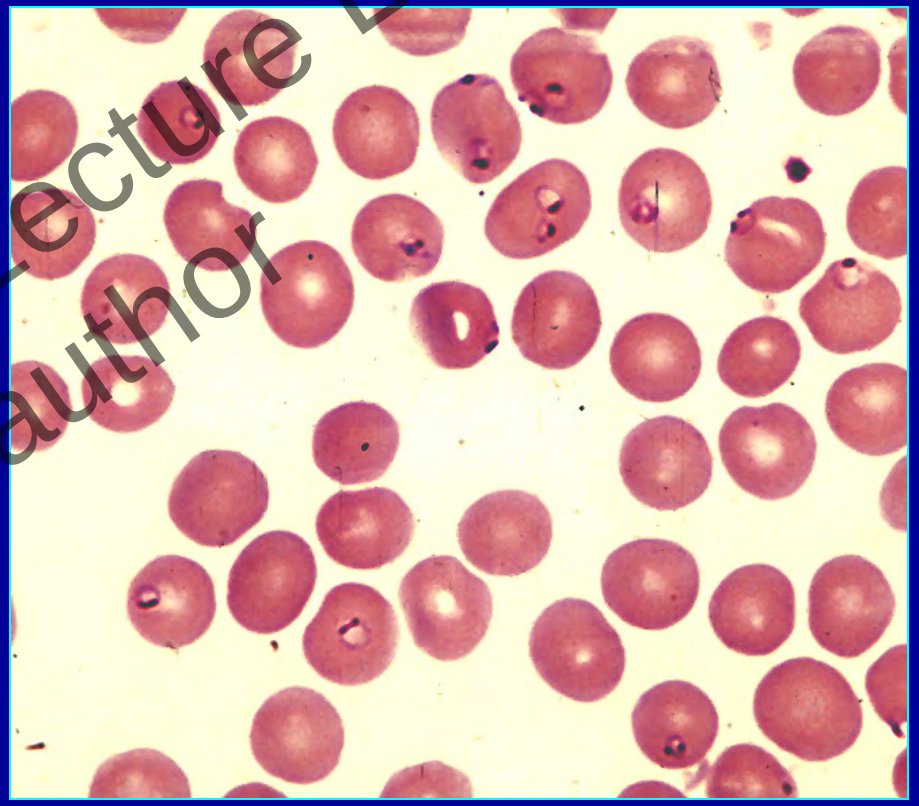
Used Mosiguard natural repellent

Took chloroquine/proguanil until 1 week after return (nausea)

Visited Dudhsagar falls on border with Karnataka State

Falciparum malaria

- 9 days after return became ill
- Admitted to hospital 4 days later
- Severe falciparum malaria
  - 7% parasitaemia
  - Pneumonia
  - DIC
  - Moderate hepatitis
- 17 days in hospital with 9 days in intensive care



- Full recovery

Case 2. 23 year old woman

Candolim & Dudhsagar

falls with husband

4-18 Nov 2006

Bed & breakfast

Both:

- Used DEET
- Full CQ/P prophylaxis

She had few mosquito bites, he had many

Fever end of March 2006

Progress

Hospital after 4 days

Temp 39.5^{o} C

Nil else

Hb 12.5 g/dL

WBC 4.5 x 10^{9}/L

Platelets 105 x 10^{9}/L

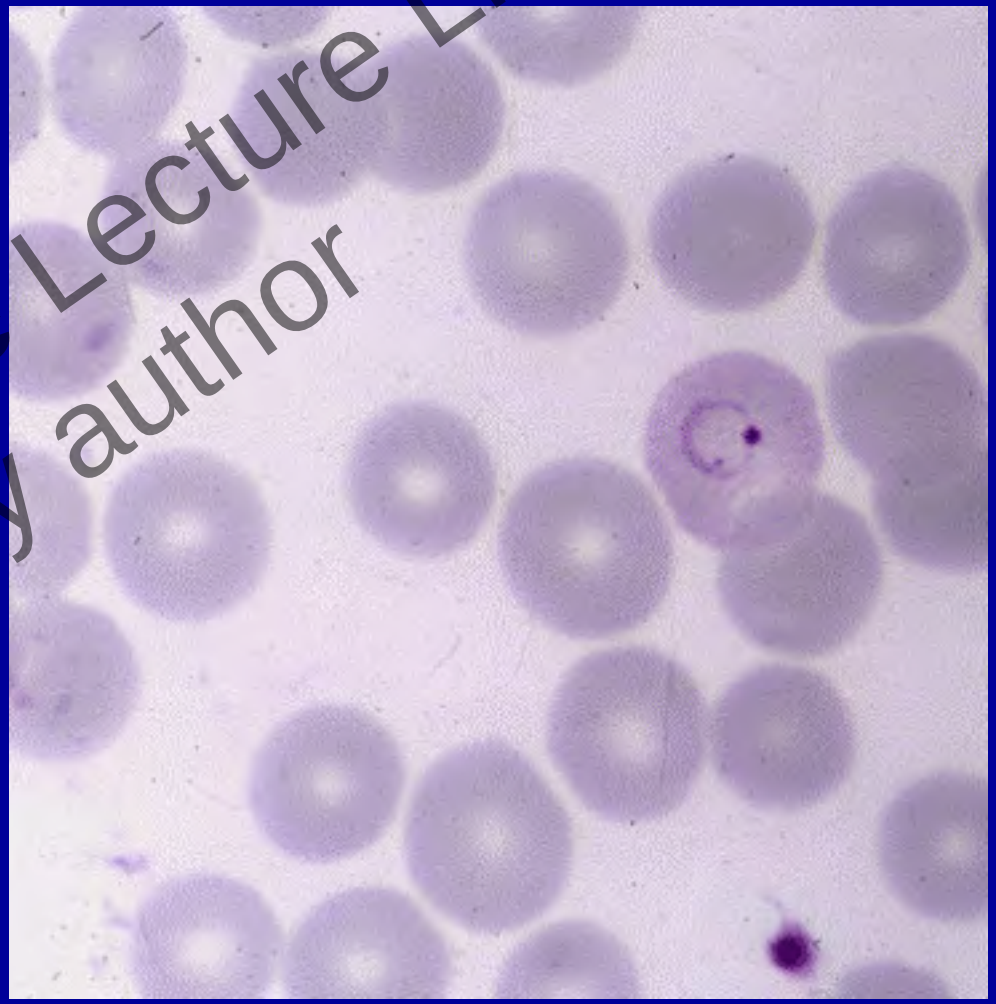
Bilirubin 25 mmol/L (<18)

AST 43 U/L (<40)

Blood film shows:

What is the diagnosis?
(choose one but vote in a minute)

1. Dengue
2. Falciparum malaria
3. Vivax malaria
4. Ovale malaria
5. Ehrlichiosis



What is the diagnosis?
(choose one - vote now)

1. Dengue
2. Falciparum malaria
3. Vivax malaria
4. Ovale malaria
5. Ehrlichiosis

What is the diagnosis?
(choose one – answer)

1. Dengue
2. Falciparum malaria
3. Vivax malaria
4. Ovale malaria
5. Ehrlichiosis

Points in favour of vivax

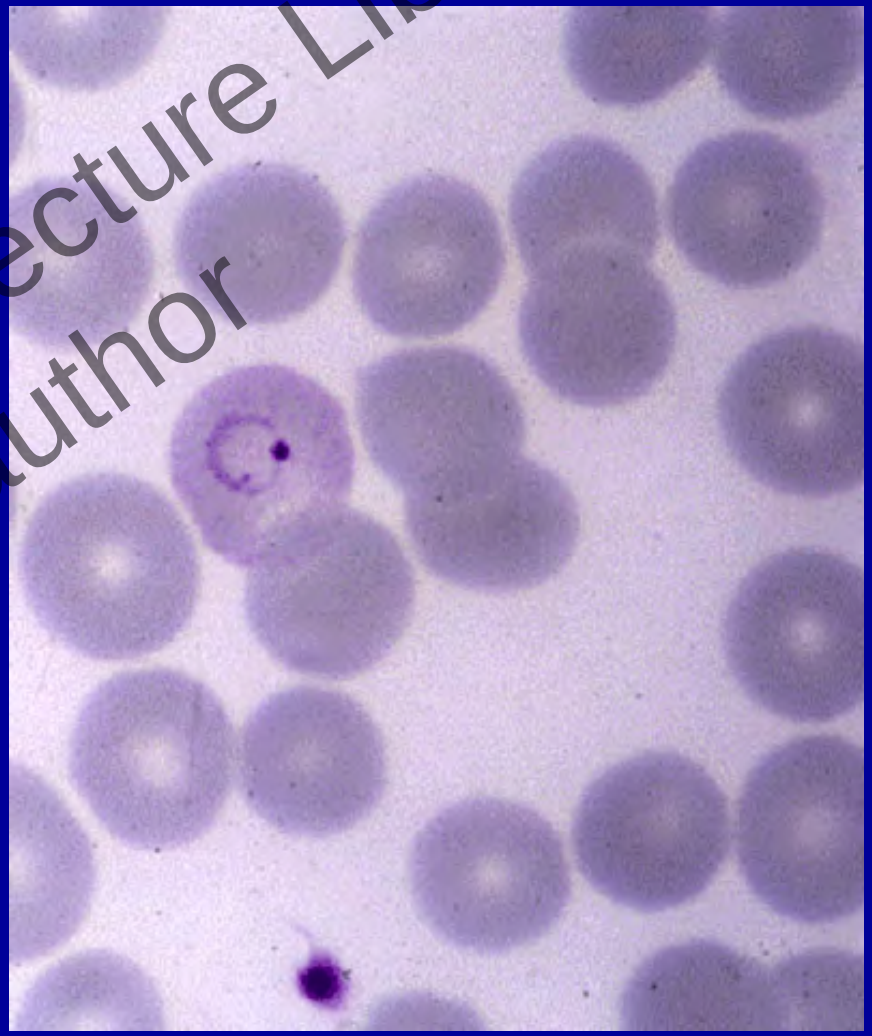
Common in India

Long incubation period

No complications

Parasitology

- **Scanty parasitaemia**
- **Younger, larger RBC**
- **Single chromatin**
- **Schüffner's dots**
- **Rest of film shows various stages & amoeboid forms**



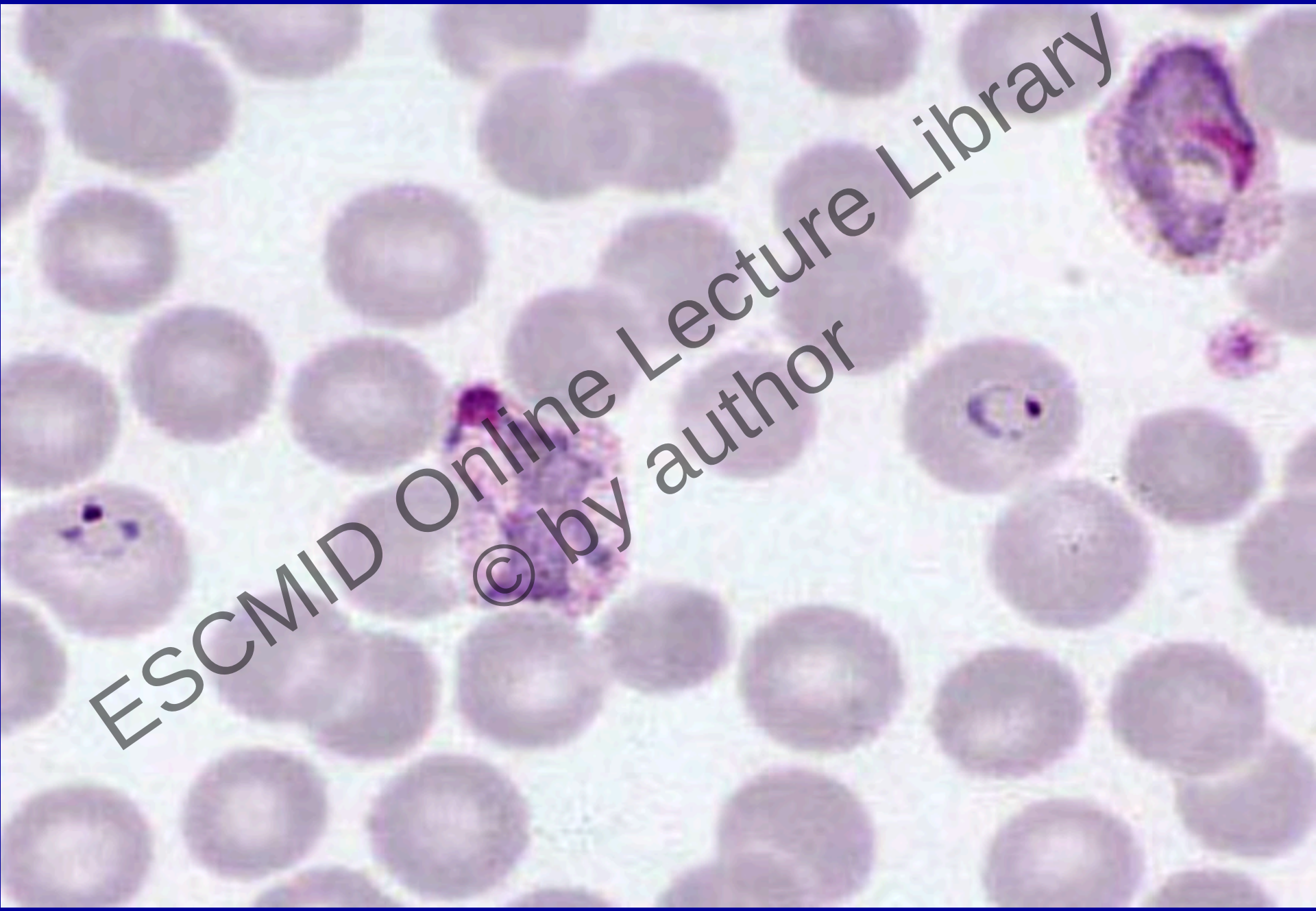
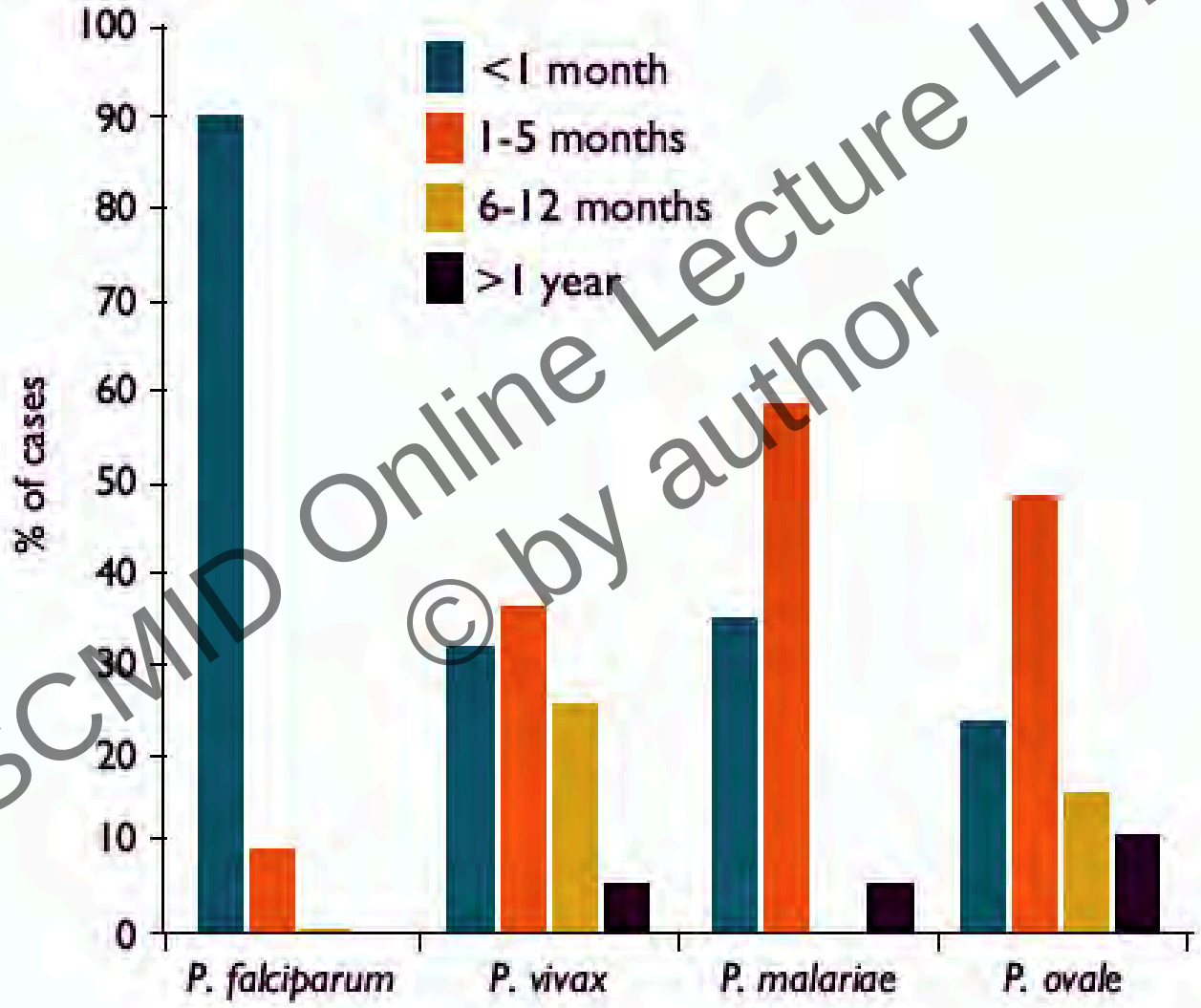


FIGURE 6: Cases of malaria in the UK by interval between arrival in the UK and diagnosis of malaria: 2003



Health Protection Agency

NaTHNaC National Travel Health Network and Centre

Progress

Treated with chloroquine 1.5 g over 3 days

Rapidly improved

Glucose 6 phosphate dehydrogenase normal

Primaquine considered

Weight 65kg

What primaquine regimen would you use ? (choose one)

1. 15mg per day for 2 weeks after CQ finished
2. 15 mg per day for 2 weeks at same time as CQ
3. 30 mg per day for 2 weeks after CQ finished
4. 30 mg per day for 2 weeks at same time as CQ
5. None

What primaquine regimen would you use ? (choose one)

1. 15mg per day for 2 weeks after CQ finished
2. 15 mg per day for 2 weeks at same time as CQ
3. 30 mg per day for 2 weeks after CQ finished
4. 30 mg per day for 2 weeks at same time as CQ
5. None

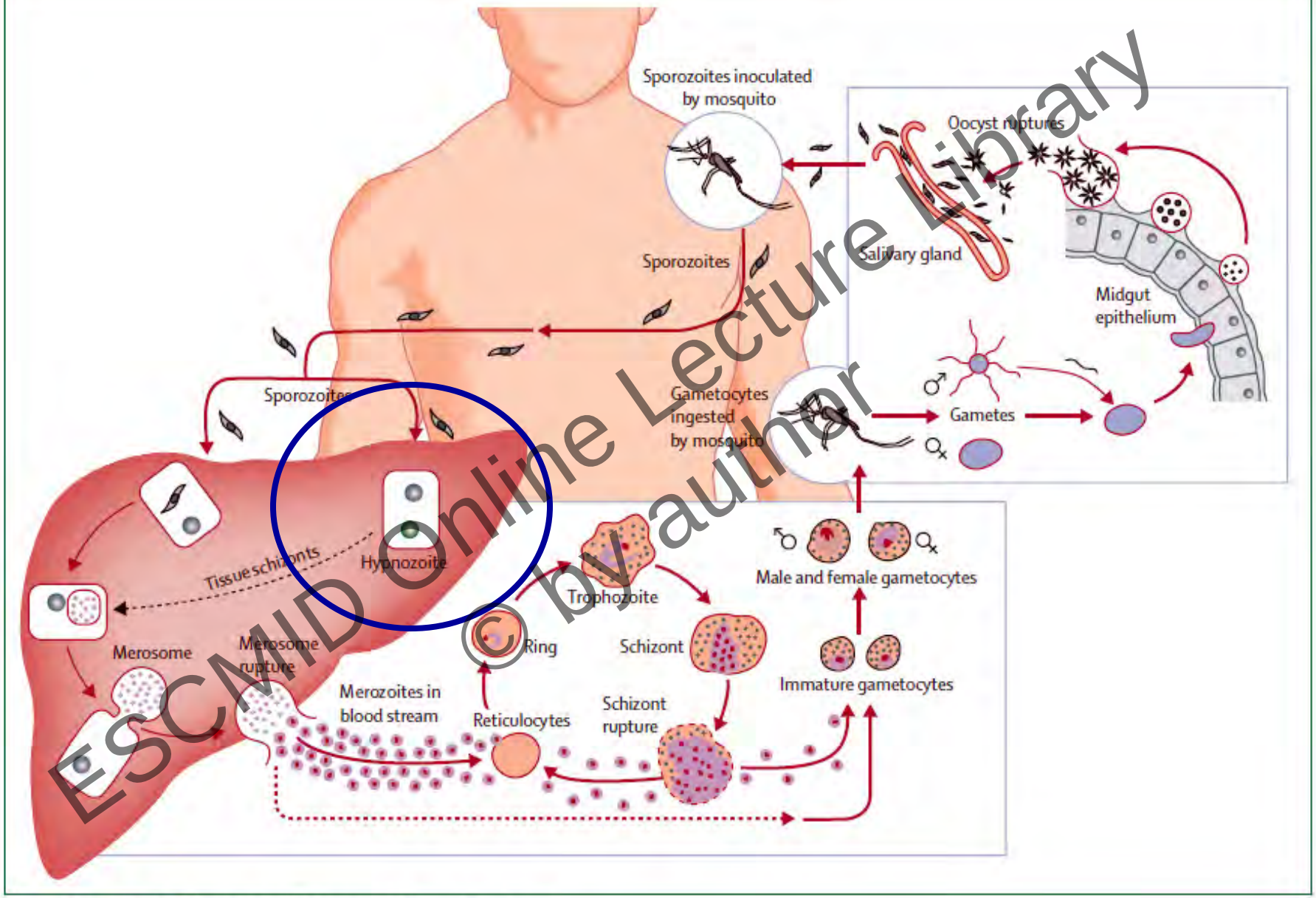


Figure: Life cycle of the human malaria parasite *Plasmodium vivax*

Mueller I *et al. Lancet Infect Dis* 2009; 9: 555-66

Case 3. 26 year old husband

Had been admitted to another hospital in late January (two weeks of symptoms)

Quite ill with vivax malaria

Treated with full dose chloroquine and primaquine 30mg/day for 14 days

Readmitted May 2006 with confirmed vivax malaria (1 day of symptoms)

Weight 92 kg

How would you treat him now? (choose one)

1. CQ 1.5 g and PQ 30 mg/day for 14 days
2. CQ 1.5 g and PQ 30 mg/day for 21 days
3. CQ 1.5 g and PQ 45 mg/day for 14 days
4. Malarone alone
5. Malarone plus PQ

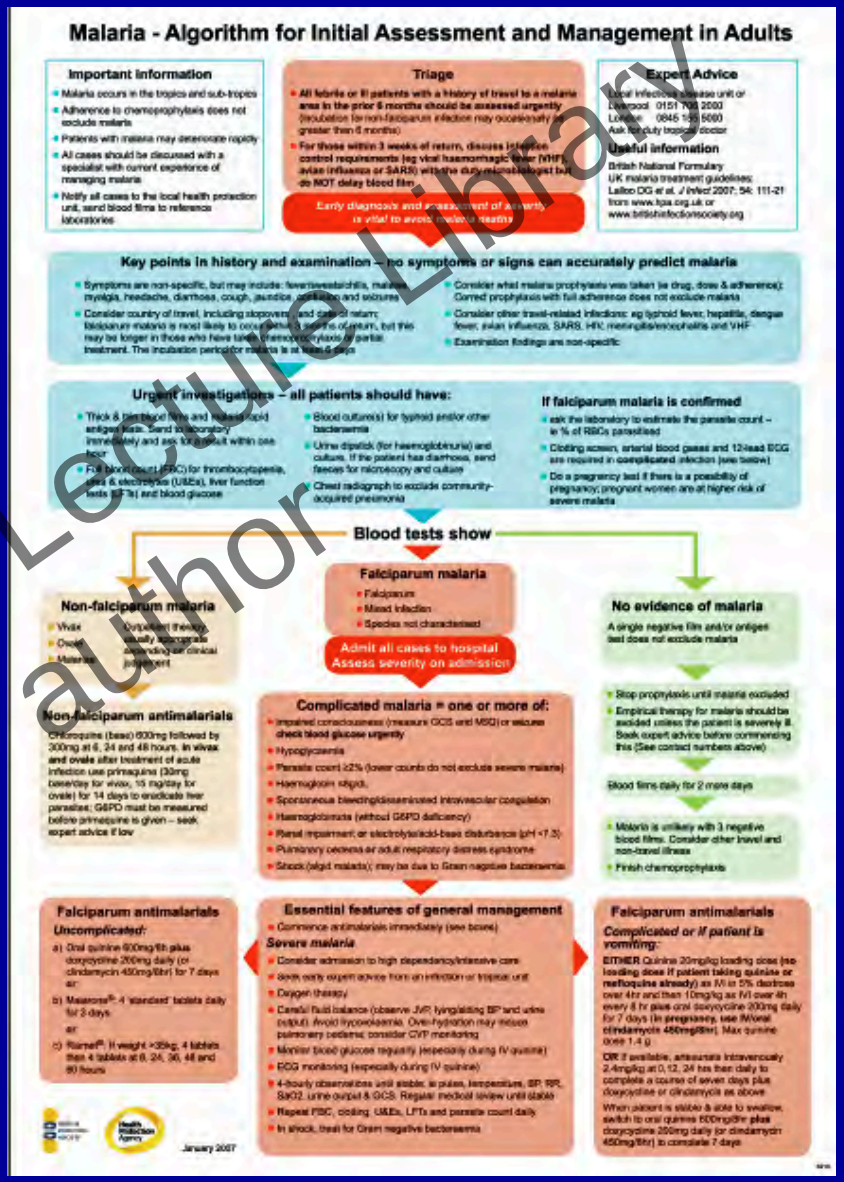
How would you treat him now? (choose one)

1. CQ 1.5 g and PQ 30 mg/day for 14 days
2. CQ 1.5 g and PQ 30 mg/day for 21 days
3. CQ 1.5 g and PQ 45 mg/day for 14 days
4. Malarone alone
5. Malarone plus PQ

Guidelines

Immediate diagnosis & management of malaria in emergency room

- **British Infection Society**
- **Advisory Committee on Malaria Prophylaxis (HPA)**



BRITISH INFECTION SOCIETY

Health Protection Agency

www.britishinfection.org/drupal/

Malaria in Goa

- Previously endemic
- Risk assessment last 10 years – low risk for tourists so chemoprophylaxis not usually advised
- Heavy rains Oct 2006
- Falciparum cases in European travellers especially from Candolim area north of capital Panaji
- Expect more cases of vivax
- Chemoprophylaxis now advised

Rapid communications

Continuing importation of falciparum malaria from Goa into Europe

T Jelinek (jelinek@bctropen.de)[1], on behalf of the European Network on Imported Infectious Disease Surveillance (TropNetEurop)
1. Berlin Center for Travel & Tropical Medicine, Berlin, Germany

A case of falciparum malaria acquired in Goa, India, has recently been reported to the European Network on Imported Infectious Disease Surveillance (TropNetEurop, http://www.tropnet.net). The report relates to a Swedish woman in her fifties who had spent two weeks in Goa (Candolim beach) and Kerala in India without taking malaria chemoprophylaxis. In mid-December 2007, approximately two weeks after returning to Sweden, she fell ill with fever and a mild cough. Ten days after the onset of symptoms, thick and thin films were done and an infection with *Plasmodium falciparum* with a parasitaemia of 1.8% was diagnosed. The patient was admitted to hospital, uneventfully treated with a standard dose of mefloquine and discharged four days later.

life-threatening illness. The diagnosis can only be made if a careful travel history is taken, and testing done early, even for regions where malaria is not normally recognised.

References

1. TropNetEurop Friends & Observers Sentinel Surveillance Report: November 2006. Map on p. 3. Available at: http://www.tropnet.net/reports_friends/pdf_reports_friends/nov06_dengue2006_friends.pdf
2. Rainfall maps, India Meteorological Department. http://www.imd.ernet.in/section/hydro/dynamic/seasonal-rainfall.htm
3. Jelinek T, Behrens R, Bisoffi Z, Bjorkmann A, Andersen P, Blaxhult A, et al. Recent cases of falciparum malaria imported to Europe from Goa, India, December 2006-January 2007. Euro Surveill 2007;12(1):E070111.1. Available from: http://www.eurosurveillance.org/ew/2007/070111.asp#1

Jelinek T *et al. Euro Surveill* Jan 2008;13(5):pii=8028

Lessons

- Epidemiology of infection continually changing
- Pretravel health advice needs to keep up with this
- Chemoprophylaxis does not always prevent malaria
- Especially vivax/ovale
- Use higher dose primaquine for vivax (and ovale?)
- Give primaquine with chloroquine (not after)
- Clinical chloroquine resistance not yet a major problem with vivax

Lalloo DG *et al.* (UK guidelines) *J Infect* 2007; 54(2): 111-21
Hill DR *et al.* Primaquine. *Am J Trop Med* 2006; 75(3): 402-15
Griffith KS *et al.* (US guidelines) *JAMA* 2007; 297: 2264-77