

# 22

## 32-Year-Old Woman from Nigeria With Jaundice and Confusion

CHRISTOPHER J.M. WHITTY

### Clinical Presentation

#### History

A 32-year-old, previously fit woman of African descent born in Europe, travelled to rural Jos in Nigeria to visit relatives. According to her husband, 18 days after her return to Europe she developed a fever, and 3 days later became very unwell with abnormal behaviour.

#### Clinical Findings

On examination she has a temperature of 37.5°C (99.5°F), is mildly jaundiced and confused; her Glasgow Coma Scale is 14/15. She has no rash or palpable lymph nodes, and throat and sclerae are not injected. She has some fine crepitations at the lung bases.

#### Laboratory Results

The laboratory refuses to undertake tests because of recent rural exposure in an area known to have viral haemorrhagic fever (Lassa).

### Questions

1. What is the differential diagnosis?
2. Is viral haemorrhagic fever (VHF) a real risk, and which single test is the most important?

### Discussion

A young woman presents with a fever, jaundice and confusion almost 3 weeks after returning from a visit to rural Nigeria. The patient is of African ethnicity but was born in Europe.

#### Answer to Question 1

##### *What is the Differential Diagnosis?*

The differential diagnosis is wide, but by some distance the most common cause of fever and jaundice or fever and confusion in West Africa is severe falciparum malaria. The fact that the patient had a low-grade fever at presentation is not a

reason to exclude malaria, because the temperature swings in malaria and a significant proportion of cases are afebrile at presentation. A common misdiagnosis is acute viral hepatitis; there, fever precedes the jaundice, and this rapid fulminant course would not be typical. Other causes of acute fever and jaundice include typhoid fever, leptospirosis and ascending cholangitis. Patients with advanced HIV disease and Gram-negative sepsis can also present like this.

People returning from visiting friends and relatives constitute a large proportion of imported malaria and are at high risk of not taking antimalarial prophylaxis. A woman born in Europe would be unlikely to have any immunity to malaria.

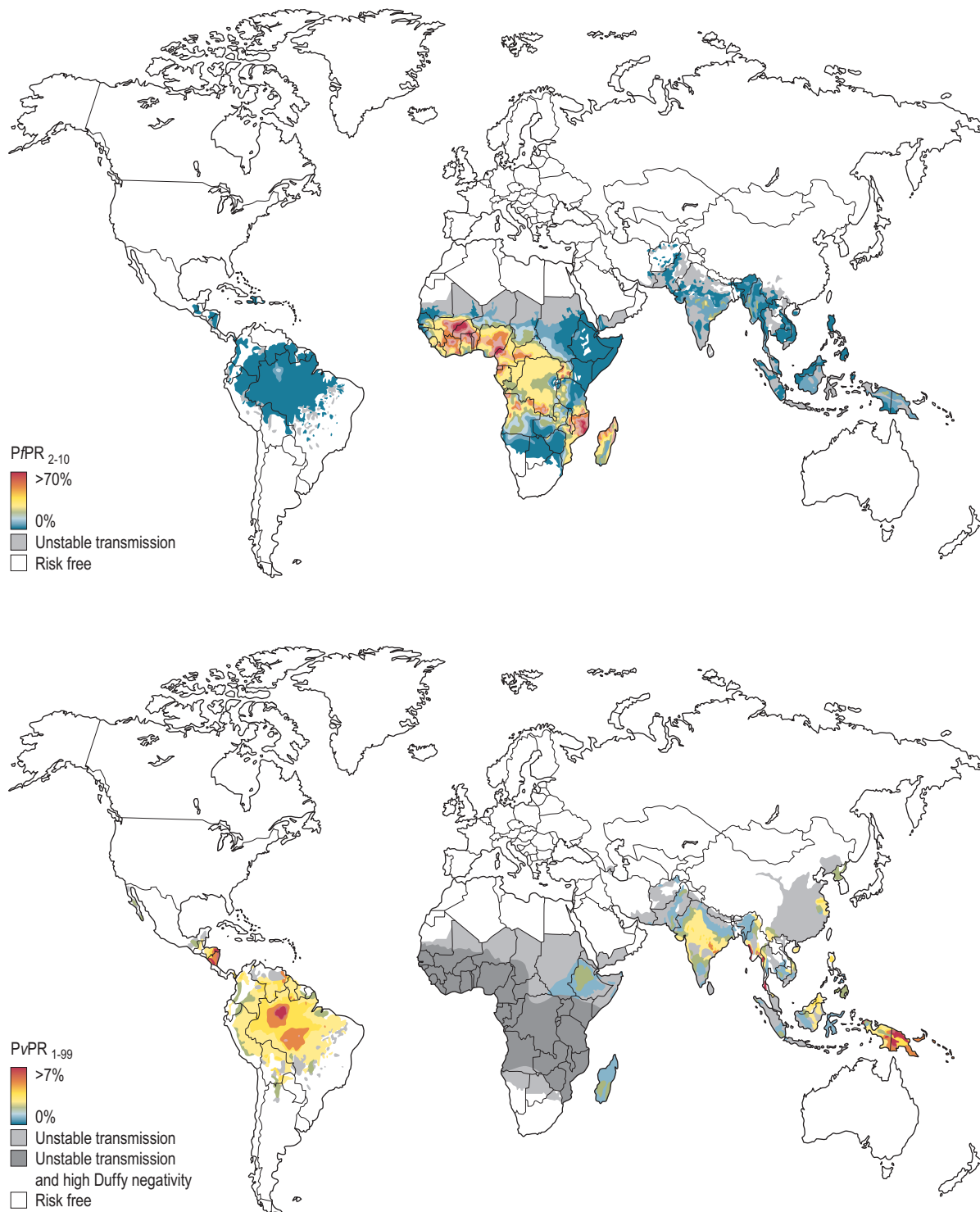
#### Answer to Question 2

##### *Is Viral Haemorrhagic Fever (VHF) a Real Risk, and which Single Test is Most Important?*

The laboratory is right to raise VHF as a possible diagnosis, but VHF is very rare and 18 days (or more) since leaving the high-risk area is on the outer limit of the incubation period of Lassa fever and other VHF (generally up to 21 days). The absence of injected sclerae or rash is also against the diagnosis. A malaria blood film would be mandatory in this case. If it is positive, the woman could be treated as malaria and other tests taken with standard universal precautions.

#### The Case Continued...

The patient was found to have a *Plasmodium falciparum* parasite count of 18% and a plasma creatinine of 430 µmol/L (reference range 45–90 µmol/L), demonstrating acute kidney injury. Urine output failed to respond to fluid challenges, therefore pre-renal failure could be ruled out. She was treated with intravenous artesunate and the parasite count dropped to 5% but she lapsed into deep coma. Renal function deteriorated and she needed haemofiltration. After the parasites had cleared on day 5, her consciousness level began to improve, but she developed laboured breathing. The chest radiography findings were suggestive of ARDS, and she required prolonged respiratory support. She eventually made a full recovery.



• **Fig. 22.1** Global distribution of *Plasmodium falciparum* and *Plasmodium vivax* malaria. Upper panel shows the model-based geostatistical point (MBG) estimates of the *Plasmodium falciparum* annual mean parasite rate PfPR<sub>2-10</sub> (defined as the predicted proportion of 2–10-year-olds with patent parasitaemia) for 2010 within the spatial limits of stable *P. falciparum* malaria transmission. Lower panel shows equivalent estimates of the *Plasmodium vivax* annual mean parasite rate (PvPR<sub>1-99</sub>). Note this prediction is for all age groups (1–99). Areas in which the Duffy negativity gene frequency is predicted to exceed 90% are shown in hatching. (Reproduced from Farrar, J. et al., 2013. Manson's Tropical Diseases, 23rd ed. Elsevier, London. Fig. 43.1.)

**SUMMARY BOX****Malaria**

Malaria is the most common life-threatening infection in patients who have recently arrived from Africa. It is also common, but much less so, from South and South-east Asia (Fig. 22.1). A history of fever is usual in non-immune patients, but other features of the presentation are non-specific and overlap with many other infections, with headache and malaise. Malaria should always be high on the list of differential diagnoses for any unwell patient from the tropics, because there are many misleading presentations.

The only way to exclude malaria is a malaria blood test. Diagnosed early before complications begin, falciparum malaria is relatively easily treated with antimalarial drug combinations. In patients with severe malaria, artesunate is the drug of choice; if this is not available locally, artemether or quinine are the alternatives.

In adults, cerebral malaria (for practical purposes altered consciousness, seizures), acute renal failure and pulmonary oedema or ARDS are the most common manifestations of severity, and may occur together or in any combination. Renal failure, and in particular ARDS, often presents later in treatment, and may first become apparent after all parasites have cleared. Disseminated intravascular coagulation and shock (often with co-existing bacteraemia) are rare complications. Elderly patients have a high mortality. Various adjunctive treatments for malaria complications have been tried but to date none shows survival advantage. The key to malaria management is to diagnose it early

and get effective antimalarial drugs into the patient as soon as possible.

**Further Reading**

1. White NJ. Malaria. In: Farrar J, editor. *Manson's Tropical Diseases*. 23rd ed. London: Elsevier; 2013 [chapter 43].
2. Checkley AM, Smith A, Smith V, et al. Risk factors for mortality from imported falciparum malaria in the United Kingdom over 20 years: an observational study. *BMJ* 2012;344:e2116.
3. WHO Global Malaria Programme. *Management of Severe Malaria – A Practical Handbook*. 3rd ed. Geneva: WHO; 2013.
4. Ashley EA, Phyo AP, Woodrow CJ. Malaria. *Lancet* 2018;391:1608–21.