

Diagnosis and treatment of imported and odyssean malaria



Malaria has long been regarded as a major public health burden in South Africa (SA), affecting vast regions of the country. However, SA is now one of eight countries in Africa that is close to malaria elimination.^[1,2] This was documented in a supplement to the October 2013 *SAMJ*. Even though SA is on the threshold of malaria elimination, many countries in Africa continue to experience high morbidity and mortality related to the disease. Malaria may also be encountered in parts of SA not known to have malaria, in ways not typical of how it is usually transmitted or acquired. In this issue of *SAMJ* two articles^[3,4] discuss two forms of malaria seen in non-endemic areas, imported malaria and odyssean malaria.

Imported malaria is defined as malaria presenting in a country other than that in which it was acquired, while odyssean malaria is malaria acquired in a non-malarious area from the bite of an imported mosquito.^[5] The former is often a well-recognised form of the disease, but the latter is not common and therefore not as easy to recognise. Runway malaria is an example of imported malaria, while examples of odyssean malaria include airport malaria, baggage malaria, luggage malaria, suitcase malaria, container malaria, port malaria, taxi rank malaria and minibus malaria.^[5] These terms are based on the various modes of passive transport experienced by infected mosquitoes. Imported malaria and odyssean malaria are important because of the high incidence of complications and mortality often associated with them.^[5]

Global travel has become easier, and humans are able to cover vast distances in a short period. In a recent publication in *Science*, Abel and Sander^[6] quantify global international migration flows. They estimate that the largest movements occur between southern and western Asia, from Latin to North America, and within Africa.^[6] The report clearly shows that there is a huge circulation of migrants among sub-Saharan African countries. This migration dwarfs the number leaving Africa, and receives no media attention.^[6] SA is one of the countries in sub-Saharan Africa that is a common destination for migrants. The Western Cape and Gauteng provinces are regions of SA that are malaria non-endemic.^[2] They are also popular destinations for some migrant communities.

In their retrospective observational study, Opie *et al.*^[3] describe a number of imported cases of malaria at Groote Schuur Hospital (GSH), Cape Town. In this study a high rate of malaria was seen in Somali and Bangladeshi migrants over a 4-year period. *Plasmodium falciparum* was the most common malarial species identified. A mortality rate of <1% was found in this study, which is in keeping with the national target rate. Opie *et al.* postulate that the low mortality rate may be due to the semi-immunity of the majority of the patients, who came from malaria-endemic areas. Another possibility not mentioned in the article could be that GSH has a dedicated infectious disease department that advises on the management of all cases of malaria admitted to the hospital. It must be noted that not all folders were found and analysed, a common limitation of retrospective reviews that has the potential to underestimate the true mortality.

The increased influx of migrants from malaria-endemic countries has a significant impact on imported malaria cases.^[7] The number of migrants who return to their home countries to visit friends and relatives (VFRs) has also increased. Often VFRs do not consider themselves at risk of acquiring malaria and therefore may not seek pre-travel advice on malaria prophylaxis. A common misconception among VFRs is that they have lifelong immunity to malaria.^[7]

Frean *et al.*^[4] describe outbreaks of odyssean malaria over a 6-year period. They demonstrate a high complication rate and mortality due to delayed or missed diagnoses. They emphasise that malaria should always be remembered as a cause of unexplained fever and thrombocytopenia, even in the absence of a travel history.

The treatment for uncomplicated *P. falciparum* malaria that is currently recommended in all endemic and non-endemic provinces of SA is artemether-lumefantrine.^[8] Primaquine is used for radical cure of *P. vivax* and *P. ovale* infections.^[8] Severe malaria is a medical emergency that requires high-level hospital care, so when a severe case is diagnosed at a primary healthcare facility or by a private general practitioner, emergency transfer to hospital is the norm in endemic and non-endemic provinces.^[8] Intravenous artesunate is the parenteral antimalarial currently recommended by the World Health Organization for the treatment of severe malaria in children and adults.^[9] It is not yet registered for use in SA, but there is limited availability through a special access programme for compassionate use on a named-patient basis.^[8]

Patterns of migration in Africa demonstrate that the largest movement of people occurs in sub-Saharan Africa. SA in particular is a common destination for many migrant populations. Imported and odyssean malaria should be remembered as a cause of unexplained fever and thrombocytopenia. Key to reducing the complications and mortality related to malaria is early recognition and treatment.

S K Dlamini

*Division of Infectious Diseases and HIV Medicine,
Department of Medicine, Faculty of Health Sciences,
University of Cape Town, South Africa
sk.dlamini@uct.ac.za*

1. Coetzee M, Kruger P, Hunt RH, Durrheim DN, Urbach J, Hansford CF. Malaria in South Africa: 110 years of learning to control the disease. *S Afr Med J* 2013;103(10 Part 2):770-778. [<http://dx.doi.org/10.7196/SAMJ.7446>]
2. Maharaj R, Morris N, Seocharan I, et al. The feasibility of malaria elimination in South Africa. *Malar J* 2012;11:423-433. [<http://dx.doi.org/10.1186/1475-2875-11-423>]
3. Opie J, Freeks R, du Pisani LA. The burden of imported malaria in Cape Town. *S Afr Med J* 2014;104(5):347-349. [<http://dx.doi.org/10.7196/SAMJ.7904>]
4. Frean J, Brooke B, Thomas J, Blumberg L. Odyssean malaria outbreaks in Gauteng province, South Africa, 2007 - 2013. *S Afr Med J* 2014;104(5):335-338. [<http://dx.doi.org/10.7196/SAMJ.7784>]
5. Isaacson M, Frean JA. African malaria vectors in European aircraft. *Lancet* 2001;357(9251):235. [[http://dx.doi.org/10.1016/S0140-6736\(05\)71340-4](http://dx.doi.org/10.1016/S0140-6736(05)71340-4)]
6. Abel GJ, Sander N. Quantifying global international migration flows. *Science* 2014;343(6178):1520-1522. [<http://dx.doi.org/10.1126/science.1248676>]
7. Pavli A, Maltezou HC. Malaria and travellers visiting friends and relatives. *Travel Med Infect Dis* 2010;8(3):161-168. [<http://dx.doi.org/10.1016/j.tmaid.2010.01.003>]
8. Upke IS, Moonasar D, Raman J, Barnes KI, Baker L, Blumberg L. Case management of malaria: Treatment and chemoprophylaxis. *S Afr Med J* 2013;103(10 Part 2):793-798. [<http://dx.doi.org/10.7196/SAMJ.7443>]
9. World Health Organization. Guidelines for the Treatment of Malaria. 2nd ed. Geneva: WHO, 2011.

S Afr Med J 2014;104(5):344. DOI:10.7196/SAMJ.8306