

# POST-KALA-AZAR DERMAL LEISHMANIASIS: A MANUAL FOR CASE MANAGEMENT AND CONTROL

REPORT OF A WHO CONSULTATIVE MEETING

KOLKATA, INDIA, 2-3 JULY 2012



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## **1. INTRODUCTION**

Post-kala-azar dermal leishmaniasis (PKDL) is a sequela of visceral leishmaniasis that appears after patients have apparently been cured of visceral leishmaniasis. PKDL has also been reported in patients without a history of visceral leishmaniasis. PKDL appears as a macular, papular or nodular rash, or a combination of these, typically on the face, but it may subsequently affect all parts of the body. PKDL may also affect the conjunctival, nasal, oral and genital mucosa. There is increasing evidence that pathogenesis is largely immunologically mediated.

PKDL is prevalent in all areas where *Leishmania donovani* is endemic (that is, in East Africa especially in Sudan, and on the Indian subcontinent, especially in Bangladesh (*Figure 1*). It does not occur as a sequela of visceral leishmaniasis caused by infection with *L. infantum*, but it has been observed sporadically in patients coinfected with HIV and *L. infantum*. There are differences between the two continents: in Sudan, for example, up to 50% of patients develop the condition after visceral leishmaniasis has apparently been cured, and the severe forms occur mostly in children. In East Africa, PKDL is mostly self-healing. In Sudan, PKDL may occur soon after treatment for visceral leishmaniasis or even concurrently with the disease. On the Indian subcontinent, PKDL occurs after visceral leishmaniasis in about 5–15% of cases, often after a 2–3 year interval; it affects children and adults equally.

The main known risk factor associated with the development of PKDL is previous treatment for visceral leishmaniasis with antimonials; however, PKDL also occurs after treatment with other medicines. The rate of PKDL occurring after patients have been treated with new therapies for visceral leishmaniasis, such as paromomycin or miltefosine, is unknown; patients will need to be followed closely to evaluate the effects of these treatments on the development of PKDL.

Noting this fact, the leishmaniasis control programme at WHO's headquarters collaborated with the vector-borne disease-control programme of the Regional Office for South-East Asia to organize a consultative meeting in July 2012 in Kolkata, India. At the meeting, experts reviewed the epidemiology of PKDL, as well as case-management, prevention and control strategies. They also reviewed recommendations made by the PKDL consortium in June 2012.

### **1.1 MEETING MINUTES**

#### 1.1.1 Opening session

Dr C. Revankar from the vector-borne disease-control programme of WHO's Regional Office for South-East Asia opened the meeting, reiterated the goal of eliminating visceral leishmaniasis from the region and emphasized the potential of PKDL cases as reservoirs of transmission. He highlighted the burden of disease in the sub region; the need to renew the memorandum of understanding signed by Bangladesh, India and Nepal in 2005 as part of a programme to eliminate visceral leishmaniasis, which expired in 2010; and the need to reinvigorate surveillance to improve case detection of PKDL.

#### 1.1.2 Objectives of the meeting

The objectives of the meeting were to:

- review the global burden and epidemiology of PKDL and asymptomatic infections;
- review PKDL case-management guidelines, and strategies for surveillance, control and prevention;
- identify gaps in PKDL control, and make appropriate recommendations for case-management guidelines.

The methods followed to achieve the above objectives included:

- brief presentations on the selected thematic areas;
- breakaway sessions in which participants were split into different working groups;
- plenary discussions, and concluding remarks.

#### 1.1.3 Thematic presentations

The following thematic areas were covered during the presentations:

- importance of asymptomatic infections in the transmission of PKDL;
- the epidemiology and burden of the disease in East Africa and the Indian subcontinent;
- diagnosis, case-management and surveillance;
- the need for additional research and recommendations made by the PKDL consortium meeting during its meeting in New Delhi, India, in June 2012.

#### 1.1.4 Working groups

Three working groups were formed:

- epidemiology, surveillance and control strategies;
- pathogenesis, clinical features, grading and diagnosis;
- case-management (focusing on regionally specific recommendations).

The working groups discussed and reviewed thoroughly the topics in their thematic areas. At the end of the session, one member presented the findings from each group. These finding were discussed in the plenary session, and recommendations were made.

### 2. EPIDEMIOLOGY

PKDL occurs in all areas endemic for *L. donovani* but is commonest in Sudan in East Africa, and in Bangladesh on the Indian subcontinent. The frequency is low in other endemic countries, and is reported to be declining in India.



Figure 1. Global distribution of post-kala-azar dermal leishmaniasis, 2005–2010

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