



#### WHAT IS BURULI ULCER?

Buruli ulcer, a disease caused by infection with *Mycobacterium ulcerans*, is one of the most neglected but treatable tropical diseases. The causative organism is from the family of bacteria that causes tuberculosis and leprosy, but Buruli ulcer has received less attention than these diseases.

Buruli ulcer has been reported in over 30 countries mainly with tropical and subtropical climates including in Africa, Australia, the Americas, Asia and the Western Pacific, but it may also occur in some countries where it has not yet been recognized. The exact magnitude of the problem is not known, but some areas may have high prevalence.<sup>1</sup> Limited knowledge of the disease, its focal distribution and the fact that it affects mainly poor rural communities contribute to low reporting of cases. It frequently occurs near slow-flowing water bodies, ponds, swamps and lakes. All ages and sexes are affected, but most patients are under 15 years of age. The disease can affect any part of the body, but in about 90% of cases the lesions are on the limbs, with nearly 60% of all lesions on the lower limbs.

This chronic disease often leads to massive destruction of the skin, often followed by debilitating deformities. Buruli ulcer is associated with nonspecific clinical manifestations and has a slow course, with a resultant delay by those affected in seeking care until there is massive skin necrosis requiring extensive surgery and prolonged hospitalization. The mode of transmission of the disease is not known, and this currently makes primary prevention strategies nearly impossible.



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#### TRANSMISSION AND DIAGNOSIS

The exact mode of transmission is unknown and still under investigation; some patients state that lesions develop at the site of antecedent trauma, and some research suggests that in Africa some aquatic insects can harbor *M. ulcerans* in their salivary glands. More recent studies from Australia and Cameroon suggest that a type of mosquito may be a vector; if confirmed, Buruli ulcer will be the only known mycobacterial disease to be transmitted by insects.

Although the recommendation is to make a confirmed diagnosis before treatment, it is commonly the case that Buruli ulcer is diagnosed and treated based mainly on clinical findings by experienced health workers in endemic areas. Laboratory diagnoses are infrequently used to make decisions about treatment because of a lack of tools together with logistic and operational difficulties. However, laboratory diagnoses can be used to confirm the clinical diagnosis retrospectively on swabs and tissues taken during treatment, but this is seldom done.

#### TREATMENT

The current recommendations for treatment are as follows: A combination of rifampicin and streptomycin/amikacin for 8 weeks as a first-line treatment for all forms of the active disease. A combination of rifampicin and clarithromycin can be used if there are contraindications. Nodules or uncomplicated cases can be treated without hospitalization.

Wound care and physiotherapy (to prevent deformities) are crucial components of care. Surgery is often needed to remove necrotic tissue, cover skin defects and correct deformities. If the patient shows signs of complications or is referred at the very late stage of the disease, this may need to be treated by amputation. Early diagnosis can simplify the surgical management and reduce the likelihood of deformities or the need for amputations.

<sup>1</sup> In countries where the disease is highly endemic some have reported foci of >20% prevalence.

## MSF AND BURULI ULCER

MSF provides medical and humanitarian assistance in 60 countries to people whose survival is threatened due to armed conflict, epidemics, malnutrition, exclusion from health care or natural disasters. MSF has been diagnosing and treating Buruli ulcer in Cameroon since 2002, offering antibiotic treatment, surgery and general medical care. So far 800 patients have been treated in the project to date.

## CHALLENGES

The disease typically affects poor communities, primarily children, where medical services are unavailable or too expensive. Buruli ulcer imposes a serious economic burden on affected households and on health systems that are involved in diagnosing the disease and treating patients. The affected patients are generally excluded and stigmatized within their community for several reasons ranging from the smell generated by the lesions and ulceration, disability and a sense of shame. Early diagnosis and treatment are vital in preventing such disabilities and stigma.



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## MSF IS CALLING FOR:

- **Increased access to existing treatments:** There is a lack of access to existing treatments, which are not always readily available both for medication and wound dressings.
- **New diagnostics are desperately needed:** A simple and rapid diagnostic field test for Buruli ulcer is urgently needed because the early disease (a nodule) can be treated locally and inexpensively at the community level.
- **Research into disease pathology:** Basic research to understand the pathology of Buruli ulcer and the mode of transmission is required to develop tools for prevention and treatment.
- **Demand for new treatments:** New treatments such as oral antibiotics are needed that can be implemented outside of secondary health care facilities and can reduce the cost and burden on health systems.
- **Increased and sustainable investment in R&D:** MSF is concerned about the complete neglect of Buruli ulcer for any significant funding for R&D. Currently Buruli ulcer receives the least amount of funding of all neglected tropical diseases.<sup>2</sup>
- **Raising awareness:** Patients, healthcare professionals and governments need to be made aware of the disease, its prevalence and its negative social impact.
- **Better data collection needed:** Studies must be done to determine the incidence and prevalence of the disease to better understand the disease and assist those affected.

<sup>2</sup> GFinder report 2008. Buruli Ulcer receives less than £10 million being only 0.4% of total research and development funding for neglected diseases.