ADRESSING CHRONIC WOUNDS
Treating Buruli Ulcer in Cameroon
The infectious disease Buruli ulcer is rarely lethal, but it leaves those who suffer from it with debilitating deformations of arms and legs. Due to traditional beliefs, affected persons are often becoming outcasts. Buruli ulcer occurs in tropical regions, around slow running rivers. Highest prevalences have been found in Sub-Sahara Africa.

Buruli ulcer is a disease related to leprosy. The mode of transmission is still not studied enough. It is though suspected to be transmitted via Microorganism living in slow running rivers, which enter the skin.

The symptoms start often with small nodules. The tissue below the visible part of the skin slowly dies, eventually leading to open wounds. These can spread over arms, legs and the back.

“I had pain for so many months and no hospital could treat it”, says Darlyse a 16-year old girl in Cameroon. “Before I came to MSF, I just wanted to die.”

Healing takes months and can cause deep scarring, retractions, and deformity. Death is a rare complication.

Since 1998, there has been a large increase in the disease detection rate. Buruli ulcer is now the third most common mycobacterial infection in human beings after tuberculosis and leprosy, and is the most poorly understood of the three diseases.

The disease often occurs in localised and remote areas where populations have limited access to medical care. The median age of Buruli ulcer patients is about 15 years; the distribution of age-specific detection rates peaks at 10–14 years and 75–79 years. Buruli ulcer has been reported or suspected in 30 tropical countries worldwide, including Australia, but west Africa is the most affected region.

The number of cases reported in some countries of west Africa is substantial: 5700 between 1989 and 2003 in Benin; 17 000 between 1978 and 2003 in Côte d’Ivoire, where prevalence reaches 16% in some villages; in Ghana, a national survey done in 1999 detected 5619 cases. At the moment Côte d’Ivoire reports 2000 new cases annually, Benin and Ghana report 1000 new cases annually. These are the most endemic countries at this time.

Case detection and diagnosis
Patients come very often at a late stage, when the open wound is already developed and too large to be easily treated. Patients only come when experiencing pain over a longer period and continuous treatment by traditional healers did not work.

Lazar, a fisherman in Cameroon says: “I got the disease because someone cursed my land. I went to traditional healers for years but they couldn’t cure me.”

Treatment
If patients come at a late stage, treatment can take up to a year or even longer. In this period they are first treated with Antibiotics. According to the WHO, “the use of antibiotics has revolutionized treatment and contributed to reducing the need for surgery by half.” WHO recommends a combination of rifampicin and streptomycin for 8 weeks for the management of Buruli ulcer.
During the whole treatment process, the wounds need to be managed. Necrotic tissue is removed, a modern dressing is applied that supports the self-healing of the skin through controlled humidity and epidermization.

Surgery in the early stages of infection is curative and highly cost-effective, since it requires a simple excision followed by an immediate closure. However, in the disease’s later stages, wide and trauma-tising excisions are needed, followed by skin grafting and accompanied by long hospital stays.

After surgery, the patients receive extensive physiotherapy to prevent functional disabilities.

A forgotten disease
Buruli ulcer occurs in remote areas, most often in surroundings without medical coverage. There is little knowledge, treatment and development of new treatment options for this disease.

Together with HUG and other partners, MSF has taken the challenge to treat the affected population in Cameroons district Akonolinga, to develop new treatment options and to make the needs of these people visible.

Further readings: The Cotonou declaration describes the main measures recommended for the coming years. http://www.who.int/neglected_diseases/Benin_declaration_2009_eng_ok.pdf
Médecins Sans Frontières (MSF) runs a Buruli ulcer treatment programme in the Akonolinga district hospital in Cameroon, with an overall staff of about 40. The majority of patients seek treatment at a very late stage, mostly due to stigmatisation, lack of knowledge of existing treatment and failure to recognise clinical signs of the disease in its early stages. To encourage treatment-seeking behaviour, MSF has adopted an active, decentralised case finding approach. Outreach teams run door-to-door screenings for Buruli ulcer throughout the district and conduct activities to educate and raise awareness about the disease.

Akonolinga is a rural district with very limited resources. The district is divided into 12 ‘health sectors’, each with its own health centre. There is one district hospital in Akonolinga town.

The MSF programme opened in 2002 to support the Ministry of Health district hospital in providing surgery, skin grafting and daily dressings. Initially, the programme adopted a passive case detection strategy. In 2005, MSF started introducing systematic antibiotic treatment for Buruli ulcer patients. Since 2002, the programme has treated over 830 patients.

Prevalence Study
In 2007 MSF undertook a joint prevalence study with Epicentre to better understand the epidemiology of Buruli ulcer in the Akonolinga district and to adapt programme management accordingly.

The study found high prevalence rates of Buruli ulcer throughout the district, indicating that the disease is a public health problem. 45 out of 10,000 inhabitants in the district were found to be infected with Buruli ulcer. 25 out of 45 sufferers presented with skin ulcers; the rest is either non active or shows sequelae. Higher disease prevalence was recorded along the river Nyong in the same district. Overall, Buruli ulcer prevalence in the district is double the Cameroon national tuberculosis prevalence rates.

Medical Management
MSF follows WHO recommendations on holistic care and interdisciplinary treatment teams

Prevalence in Akonolinga, Cameroon in 2007:
45 / 10 000*

Cameroon tuberculosis prevalence 2005 : 20.6 / 10 000
Cameroon leprosy prevalence 2005 : 0.8 / 10 000

(outlined in the “White Paper On Wound Care”) as well as WHO recommendations on treatment for Buruli ulcer.

Programme Cycle Management
In order to successfully adopt medical management, MSF takes care of a series of environmental programme issues:

1 - Ensure early detection
2 - Ensure social mobilization
3 - Strengthening capacity of health personnel
4 - Organise regular supervision of staff
5 - Promote operational research
6 - Develop cooperation and inter resp. intra-sectoral collaboration in the context of community-based rehabilitation.

In Akonolinga district, all medical activities to treat Buruli ulcer are conducted by a joint team of National MSF-staff and international employees.

MSF offers free treatment and provides the infrastructure, equipment, and medication necessary to run the Buruli ulcer treatment programme. MSF has also established an independent pharmacy in the hospital, and provides laboratory support, organisation of surgery and sterilisation, and nutritional support to patients. MSF staff participate in scientific meetings. MSF also trains local staff and brings foreign specialists (surgeons, anaesthesiologists) for short periods to Akonolinga.

Treatment Results
MSF has treated over 830 patients since the project began in 2002. Patients are categorized according to the scale of the wound. Generally, larger wounds require more complicated treatment. As the graph below indicates, the percentage of treatment defaulters is highest in the group with the largest wounds.

PARTNERS

Haute Ecole De Sante
Training project in wound care implementation in Cameroon with Geneva based wound specialists.

HUG
Provides support to operational studies, monitoring of MSFs implementation of modern wound care, study of the relationship between Buruli Ulcer and HIV. Study of efficacy of antibiotics as a treatment for Buruli Ulcer.

Pasteur Institute Cameroon
Confirmation of diagnostics. Follow up of antibiotic resistance.

Epicentre
Epidemiological analysis of the MSF programme.
Over the past twelve years wound dressing protocols have been revolutionised, but treatment protocols used for Buruli ulcer still date from the 1980s.

Using the new protocols will help to reduce the cost and complexity of treatment by reducing the need for surgery and simplifying the dressing methods. This should improve accessibility to treatment and provide sustainable development of treatment activities.

The existing treatments rely on disinfection and drying which result in delayed healing. For the patient these practices have significant drawbacks. Besides, poor dressings can seriously impact a patient’s social life since they can lead to very unpleasant odor.

For three years, MSF, with the help of the senior Health School of Geneva and University Hospital of Geneva, has developed an innovative approach to its wound care programme in the fight against Buruli ulcer in Akonolinga district. The aim of this project was to show that modern dressing protocols can be adapted to tropical settings.

MSF has trained doctors and nurses in Cameroon to update knowledge on the international consensus on healing. MSF has also worked with Cameroonian colleagues to adapt a sheet description of wounds that reflects the characteristics of Buruli ulcer. Colour sheets were designed to facilitate decision-making on treatment methods.

Treatments were proposed which can be achieved with the equipment typically found in a health centre in Africa (for example gauze, povidone-iodine, tulle gras, Vaseline).

MSF has also introduced a limited range of modern dressings. The concepts of wound infection have been addressed to rationalize the use of antiseptics and antibiotics. Attention was drawn to the struggle against oedema.

Modern dressings facilitate the work of nurses and improve patient comfort. They also require fewer dressing changes, and enable patient care by mobile teams that travel to villages twice a week, instead of forcing patients to come to the clinic on a daily basis.

Debridement and granulation are clearly effective. The results obtained on the phase of epithelialization are within the expected scope. MSF’s experience shows that the modern approach of cicatrisation can be adapted to tropical environments. The use of modern dressing facilitates organization and access to care. MSF aims...
Modern approach of cicatrisation

• Consensus on wound bed preparation
• 3 stages in the healing process
  – necrotic tissue
  – granulation
  – epidermization
• Support the healing process
  – necrotic tissue that need to be removed
  – granulation facilitated by moisture balance
  – epidermization facilitated by edge care
  – infection control when it is necessary

This wound preparation can be done with the following dressing materials:

• Non commercial material
  – Honey, clay, herbs

• Classical dressing
  – Iodine, gauze, paraffin gauze, etc.

• Modern dressing
  – alginate, hydrogel, hydrocellular, coal dressing, hydrocolloid, etc.

The advantages of modern dressing: easy to apply, reduction of pain and only needs to be changed once or twice per week which improves adherence and patient comfort in resource limited settings.

to see these experiences replicated in other resource-limited settings.

However, there are three primary obstacles to the replication of this modern approach – i) the non-recognition of chronic wounds as a public health problem; ii) lack of knowledge of international consensus on wound treatment; iii) lack of suitable and affordable materials.

Modern dressings are not essential to healing but they greatly improve its practice. The practice of differential pricing for Africa and the use of generics have helped to improve access to antiretrovirals for HIV treatment, reconciling the interests of patients and pharmaceutical companies. This example should be adapted for modern wound dressings for which prices are too high and dissemination is currently insufficient for developing countries.

The delay in the treatment of wounds and scarring found in developing countries is not inevitable. Our experience shows that quality care is a realistic goal. Modern dressing practices should be adopted widely. Africa must not be deprived of modern dressings.

The cost of modern dressings

One use of modern dressing costs between one and four Euro, depending on the dressing. For chronic wounds it needs up to 20 dressings for treatment. In some severe forms, patients permanently need ten dressings per month. The total sum of a treatment with modern dressings in resource limited settings is far too high to be either paid by the patient or integrated in primary health care.

Therefore, Médecins Sans Frontières urges to significantly lower the price of modern dressing to make this treatment available to resource limited settings.
Médecins Sans Frontières is a private international association operating in more than 75 countries with close to 400 aid programmes. MSF provides assistance to populations in distress, to victims of natural or man-made disasters and to victims of armed conflict. The organisation was awarded with the Nobel Peace Prize in 1999. MSF is working in Cameroon for more than 8 years, providing HIV/AIDS-care and responding to emergencies. At present, MSF provides medical care for Buruli Ulcer.