

# Oxygen-Ozone Therapy: a Hope Turns into Reality

## II part

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For the past two years Intermed Onlus, a humanitarian organization with health cooperation expertise in developing countries, has been tackling a severe disease caused by *Mycobacterium Ulcerans*. Known as Buruli ulcer, this disease takes its name from a region in Uganda where an outbreak occurred in 1958. The germ responsible for the disease was isolated by MacCalliun et al. in Australia in 1948. During a primary health care project implemented at the Zinvié dispensary in Benin, Intermed Onlus noted numerous cases of Buruli ulcer, especially in children. Frequent bathing in Benin's many rivers or lagoons, the children would be bitten by an aquatic insect responsible for inoculation of the mycobacterium causing the disease. Initially a nodular formation appears on the skin ulcerating after about a week to give rise to lesions which may be extensive. Current treatment is surgery which is seldom confined to excision of the nodule because patients present when they already have huge ulcers making resection highly invasive

with large excisions requiring skin grafts. When possible patients are also given medical treatment with rifampicin and streptomycin.

Intermed Onlus works in cooperation with the treatment centre for Buruli ulcer at the "La Croix" hospital run by monks in Benin and in agreement with the hospital management it has installed an oxygen-ozone device to treat patients with the disease. After staff were trained by Intermed to administer ozone therapy, a treatment protocol was established: 1) prepare the ozonized water at a concentration of 30 y/ml; 2) wash the lesions; 3) position the bag with insufflation of the mixture at a concentration of 25-30 y/ml, close the bag with an elastic band, treatment time 20 min; 4) medicate with sterile gauze.

We carried out two to three weekly treatment sessions obtaining excellent results. The surgeon responsible referred difficult cases to us, i.e. patients already treated with skin grafts still presenting large non granulating areas. As seen



Figure 1 Zinvié Centre for screening and treatment of Buruli ulcer.



Figure 2 Houses on the lagoon in Benin.



Figure 16 Man with burns.



Figure 17 Same patient receiving ozone treatment.



Figure 18 Child amputated for infiltrating carcinoma.



Figure 12 Washing with ozonized water.



Figure 13 Large Buruli ulcer treated with ozone.



Figure 14 Child receiving ozone treatment.



Figure 15 Medication after ozone therapy.



Figure 8 Area of skin removal for grafting.



Figure 9 Child receiving ozone treatment. The area of skin removal for grafting is clearly visible.



Figure 10 Same patient receiving treatment.



Figure 11 Buruli ulcer after excision and skin graft.



Figure 3 Patient with a skin graft (Buruli ulcer).



Figure 4 Same patient after ozone treatment.



Figure 5 Child being treated with ozone-filled bag.



Figure 6 Excision and skin graft (Buruli ulcer).



Figure 7 Same patient after ozone treatment.

from the figures, other patients with different lesions have been added: a man with severe burns, a child with an arm amputated due to infiltrating carcinoma and a young women with the residue of mastectomy. Hope has turned into reality and Intermed's commitment is to carry on.



Figure 19 A woman admitted to the Centre.



Figure 20 Residue of mastectomy.



Figure 21 Same patient receiving treatment.