The use of Leaf Concentrate at BUKAVU in the Democratic Republic of the Congo.

(An abridged version of a report by Dr Marie-Jo Bonnet)

Since the second quarter of 2001 we have been using Lucerne Leaf Concentrate (LLC) in the treatment of various types of malnutrition found in Sud-Kivu among the population of the Arch-diocese of Bukavu. The Diocesan Health Office was given the LLC by Madame Fourlegnie. The Office's assorted Health Teams quickly made good use of it; those of them who got none at first didn't delay in seeking some.

CONTEXT OF USE IN SUD-KIVU

Sud-Kivu is in the Democratic Republic of the Congo, below the Equator at 3 deg.S, in a mountainous province where the Health Teams attached to the Bukavu Diocese operate at altitudes from 1500 to over 2000 metres.

It is densely populated and, for long, has had dietary problems such as overall deficiency (*marasmus*); protein deficiency (*kwashiorkor, often marasmic*); iodine deficiency (*goitre*) often due to poor absorption of iodine because of prussic acid poisoning from ill-prepared cassava; or *Konzo* – spastic paraplegia caused by chronic poisoning by such cassava. To which list must be added many other deficiencies – iron, folate, micronutrients and vitamins – afflicting, above all, women and young children.

1. HEALTH GROUPS THAT RECEIVED LLC AND LUCERNE SEED

The Bukavu diocesan Health Orgnaisation covers about half the population of the Archdiocese which, in turn, constitutes somewhat more than half Sud-Kivu's population. It manages three Health Districts of the State with their hospitals and their health centres: Idjwi, Kabare & Nyangezi; one Health Sector in the town of Bukavu: Kadutu, which itself has three hospitals and health centres; and three hospitals in other Health Districts:
Nyantende, Kalehe & Luwhinja. These all had LLC as well as three Referral Health Centres : Burhinyi, Cahi & Mugeri. The LLC was distributed through their nutritional centres or by the hospital departments (paediatrics, internal medicine, maternity & surgery.

Moreover, we were brought to supply, similarly,

- CODILUSI, the unit that is concerned with the prevention and treatment of HIV/AIDS;
- Doctors and nurses dealing with diabetics;
- The HERI KWETU centre for the disabled; and
- The EL'KABANA centre, which looks after young girls rescued from the streets.

Since neither we nor the Health Authorities had any direct knowledge or experience of LLC we started by giving it only to 14 doctors for 3rd degree malnourished in-patients in their Nutritional Therapy Centres, where 8 well-experienced nutritionists helped with their care.

All wanted the scheme to be extended to the 1st and 2nd degree outpatients coming to the Supplementary Nutrition Centres as they found the response to be rapid, even spectacular.

No intolerance nor allergic reaction was recorded, nor acceptance problems (save at Kabare Hospital, where at first there was some reluctance on account of the colour and flavour).

It was only in the 2nd quarter of 2002 that LLC was more widely distributed. However, well before that, several doctors had taken it on themselves to broaden it to include pregnant women who were reasonably well nourished but anaemic; and especially to those who, having been delivered, had difficulty with breast-feeding or had no milk (often associated with malnutrition) and with whom results were spectacular. It would be desirable to have systematic distribution to all pregnant and nursing women, but that would need a lot of LLC.

In most of the hospitals, patients severely underweight were routinely given LLC (in such cases as tuberculosis, HIV/AIDS. Diarrhoea, anaemia, septicemia, typhoid, chronic suppuration, cancer….), as were those in generally poor condition who had had emergency operations (peritonitis, intestinal fistulae, neglected occlusions, &c….) and asthenic convalescents.

2. MANNER OF DISTRIBUTING LLC

We saw, above, who benefited: so far, between 1000 and 2000 individuals, all of whom had been seen daily by nutritionists and examined weekly by a doctor when note was taken of weight; height; general condition; presence or not of oedema; diarrhoea; digestive or respiratory troubles; and Haemoglobin level.

The dose of LLC was, for children: 5 – 6 g a day
and for adults: 10 – 12 g a day.

Average duration of treatment was from 30 to 45 days.

LLC was served mixed either with maize porridge or with vegetables after cooking. Anaemic subjects had theirs at the start of a meal mixed with fruit juice.

In hospitals and maternity units, LLC was handed out in sachets which the patients were taught how to store and use.

Post-operatively, LLC was given very early, at the first sign of flatulence, even where there were intestinal sutures.

At the onset of Konzo, LLC was given immediately with cereal and vegetable porridge and injectable B vitamins; any improperly de-toxified cassava was removed.

3. OVERALL RESULTS

All Health Teams remarked on the speed of recovery:

- cure in a week or two of asthenia and apathy;
- quick return of appetite and improvement of general condition;
- weight gain, even overtaking 'target weight' in 4 – 6 weeks;
- diarrhoea and oedema clearing up in a few days without needing any other treatment;
- correcting in 4 or 5 weeks of anaemia and other indicators of deficiencies (skin, hair, muscular strength, liveliness, etc.) even in cases of severe malnutrition;
- rapid post-operative recovery with less asthenia during convalescence; just as we saw with children with HIV/AIDS or TB;
- absence of milk cured in 2 or 3 days and the supply then often becomes abundant.

4. CONCLUSIONS AND AIMS FOR 2003 AND THEREAFTER

- A year's experience of using LLC against malnutrition has given very good results, rapid and sometimes spectacular.
- We aim to look more closely at the patients under treatment and to have a doctor co-ordinate what is done by the different Health Teams to simplify the analysis of results.
- Collaboration with the LWIRO Centre (Belgo-Congolais Cemubac programme) would hasten official Congolese Approval of LLC as a food.
- We see LLC being used routinely both for weaning and for pregnant women at Ante-natal Clinics.
- Looking ahead we foresee:
    - Local preparation of LC from locally grown lucerne or other foliage.
    - The sale of sachets of LLC in canteens and shops that are already selling flours and biscuits made from maize/sorghum/soya mixes.

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