

MEDICAP

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Medicine and Help for Prisoners
Person in charge: Gérard FAYETTE

B.P. N° 4238

101 - ANTANANARIVO

MADAGASCAR

☎ : +261 20 22 528 53

E-MAIL : fayette@wanadoo.fr

FAX FOR MY ATTENTION :

+261 20 22 428 07

REPORT by Doctor ANDRIANASOLO Fidolin **Doctor-in-Chief, MEDICAP**

Leaf Concentrate as a Supplement to Prison Rations in Madagascar

Nutritional situation in the prison environment

Nutrition in prisons is insufficient in quantity and not very varied. It consists almost entirely of cassava or rice. The daily quantities do not nearly cover the (prisoners') calorific needs. Furthermore rice, and especially cassava, lack nutritional elements that are indispensable for a balanced diet: protein, vitamins, lipids and minerals. The deplorable health situation which predominates in the prison environment is the direct result of the nutritional deficit. It is characterised by a loss of weight, anaemia and illnesses linked to malnutrition: respiratory infections, diarrhoea, skin infections, lower auto-immune system resistance and frequently symptoms of protein malnutrition: bi-lateral lower limb oedema, loss of hair, dizziness, sight problems caused by a lack of vitamin A. The mortality rate is abnormally high.

Lucerne leaf concentrate (LLC)

At the end of 2003, the French association SOS Enfants sent Médicap 1000kg of lucerne leaf concentrate (LLC) with the aim of testing its effect as a supplement to the deficient prison rations. LLC is a concentrate of lucerne which contains, in a much reduced volume, all the nutritional elements which rice and cassava lack. It was offered by APEF (Association pour la Promotion des Extraits Foliaires en nutrition) and is already distributed in several countries to children and mothers, but not in prisons.

First use of LLC: observations

The first dietary supplements (of LLC) were given in Tamatave prison under the control of Sister Jeanne d'Arc. After a month and a half, 84 inmates increased in weight by between 0.5kg and 2kg, 11 stayed the same and one lost 1kg, although his oedema had disappeared.

I personally conducted another test over 4 weeks, also at Tamatave, on 100 prisoners, of whom 8 were women, whose BMI-IMC was less than 18.5. Let us remember that the BMI-IMC is an indicator calculated by weight divided by the square

of the height. It is considered that a BMI-IMC value of less than 18.5 corresponds to the onset of malnutrition.

LLC supplement = 10g added to 300-500g daily ration of cassava

Overall result: 69 - increased in weight by between 0.5 and 4kg
7 - no change
8 - weight loss between 0.5 and 8kg
16 - left programme

This (result) led Médicap to enlarge the distribution of LLC to 330 individuals. I was then able to observe that the increase in weight differed significantly depending on the quantity of the base food (i.e. rice or cassava) and that there was a minimum quantity of calories with which the LLC should be combined in order to avoid malnutrition. This quantity should be at least 500g of rice or cassava per day. Often there was only 300g (for the prisoners). In these cases, weight continued to fall: nonetheless, I was able to witness an improvement in the general condition (of the prisoners) and in particular the disappearance of oedema, anaemia, dizziness and a notable reduction in nervous disorders.

In addition, over the last 6 months, we have been able to witness an important reduction in deaths compared with the previous period, despite an almost doubling of the population.

Current Médicap programmes

We have organised the use of LLC in the prisons at Tamatave, Vatomandry, Mananjary, Manakara, Farafangana and Fort-Dauphin, taking into the account the nutritional state of the prisoners. We give LLC to those with at least grade 1 malnutrition, i.e. those with a BMI-IMC of less than 18.5. These currently number 465 (12.13% out of a total of 3883). We have asked the prison administration to provide at least 500g of rice or cassava per day.

My conclusions

The introduction of LLC into the diet of prisoners has allowed me, as a doctor, to confirm that there is an original and low-cost solution to the problem of malnutrition in prisons.

It goes without saying that, if we had the means, it would be desirable to provide LLC to the whole prison population because it represents an ideal nutritional complement to the prisoners' poor, calorie-heavy rations, for the low price of 13,000 to 18,000 Ariary (5 to 7 euros) per year.

This is why, as a first step, my wish would be for the authorities to observe the first results that Médicap has already obtained. Some results appear miraculous when LLC is combined with at least 500g of base food (rice or cassava).

After that, I would propose that the government should finance a controlled study following a scientific protocol specified by doctors and nutritionists.

In the event of a successful study, Madagascar itself could then produce LLC, which would also be convenient for the other sectors of the population exposed to malnutrition who do not have access to rich and varied foods owing to their poor purchasing power.

Doctor ANDRIANASOLO Fidolin
Doctor-in-Chief, Médicap