

## Nutrition in HIV patients is vital

This Policy Brief examines the effect of nutritional supplements on HIV patients based on the randomized clinical trial called, the ARTfood study which was conducted from July 2010 to February 2013, in Jimma, Ethiopia

### Background

Access to antiretroviral treatment (ART) has improved in Sub-Saharan Africa (SSA), but mortality continues to be high in the first few months of treatment. Poor nutritional status at initiation of ART is a strong predictor of mortality. Fortified blended foods (FBF) or lipid-based nutrient supplements (LNS) are widely distributed for patients with HIV in SSA. However, there is little evidence of their effects. It has been suggested that whey protein (WP) may improve recovery of lean body mass in HIV-patients but this has not been confirmed by studies. WP may also have an immune modulating effect as it increased CD4 count in HIV patients. The ARTFood study (a randomized clinical trial) has been conducted at Jimma University. In this study we looked at the effects of 3 months for those with BMI between 16 and 18.5 Kg/m<sup>2</sup>.

In Ethiopia Plumpy'Nut ( LNS designed to treat children for severe acute malnutrition) is currently distributed for 6 months to adult HIV patients with BMI <16 and for 3 months and three months period, respectively. Nutritional counselling is given for all patients.

### What are the main findings from The ARTFood study?

The study from Jimma has shown that the nutritional supplement improves weight gain, lean body mass, grip strength and immune cells (CD4 and total lymphocytes). Replenishment of lean tissue mass and improvement in grip strength may allow patients to strive better for their livelihood.

The study team has also assessed patients perception and acceptability of the supplement. The supplement was generally viewed as beneficial and adherence to the supplement was high despite complaints about nausea and vomiting after ART initiation.

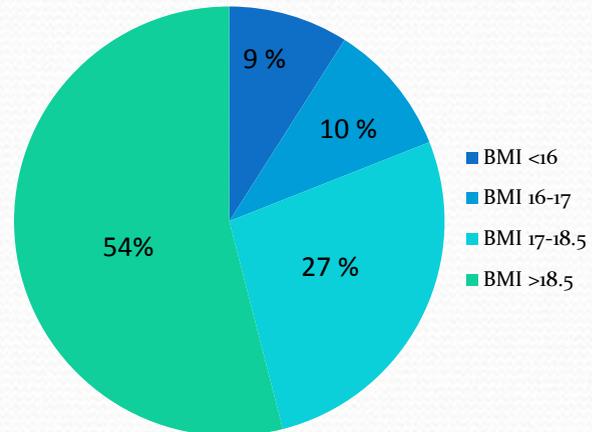


Fig.1 Wasting among HIV patients in Jimma, Ethiopia

### Nutrition and HIV in ART era

- In SSA up to 26% of HIV patient die within the first few months of commencing treatment.
- Low body mass index (BMI) at initiation of ART is associated with poor treatment outcomes.

### Interventions in SSA Africa

- Various nutritional supplements are widely distributed as part of ART programmes in SSA, but very little is known about the effects of these programmes.

### Findings from the ARTFood study

- Three-months supplementation after initiation of ART resulted in a more than three-fold weight gain, compared with ART alone, with substantially more lean body mass gained. In addition, the LNS improved CD4 and total lymphocytes recovery.

## Policy options

Providing ART alone regardless of nutritional status

### **Advantage**

Inexpensive in terms of direct cost

### **Disadvantage**

Early mortality is high, particularly among malnourished patients. ART alone can induce weight gain but, if patients don't take an adequate nutrition, the weight gain will be mainly fat which may cause metabolic complications in the long run.

Providing nutritional supplement for wasted patients for 3 months

### **Advantage**

Most patients improve in weight gain, lean body mass and grip strength and thus can strive their daily lives.

### **Disadvantage**

Expensive and needs coordination among different sectors. Three months may be short for full recovery of some patients.

Providing nutritional supplement for wasted patients for 6 months

### **Advantage**

It may allow majority of patients to recover from malnutrition??

### **Disadvantage**

Logistically very expensive and challenging to distribute to all needy patients.

## Policy Recommendations: call to action

As malnutrition among HIV patients is widespread, providing nutritional supplementation for patients commencing ART has paramount importance to improve weight gain, grip strength and immune recovery. The improvement in lean body mass and grip strength leads to maintain or restore their work and thereby cause positive effect on daily lives of patients and their families.

- Provide the supplement for three months to patients who have experienced weight loss.
- Empower food industries to produce the LNS designed for HIV patients locally.

### References:

1. Nutritional supplementation of HIV patients initiating antiretroviral treatment. *BMJ* 2014 348: g3187
2. Use, Perceptions, and acceptability of a ready-to-use supplementary food among adult HIV patients initiating antiretroviral treatment: a qualitative study in Ethiopia. *Patient Preference and Adherence*, 7:481
3. Physical activity and capacity at initiation of antiretroviral treatment in HIV patients in Ethiopia. *Epidemiol and Infect* 2014 Jun 24:1-11

## The ARTfood study

The ARTfood study was a randomised controlled trial conducted in Jimma among adult HIV patients to assess the effect of nutritional supplements. In the study, patients commencing ART received a daily supplement of 200 grams of lipid based supplement for three months. The supplement is energy and nutrient dense with low water content to resist bacterial contamination. The supplement was adapted to satisfy the needs of adults living with HIV, based on WHO dietary recommendations.



Fig. 2 The Nutritional supplement

## The team

The study was conducted by a team of Ethiopian and Danish researchers under the collaborative project called "Jimma University and University of Copenhagen Alliance in Nutrition" (JUCAN).

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