

ABSTRACT:

Title

Effect of micro and macro nutrient supplementation on disease outcome in adolescents with HIV on HAART: a randomised double-blinded clinical trial

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Background: Adolescents with HIV are a unique group of patients. Growth spurt during this period requires more calories. There is a high prevalence of nutrient deficiencies associated with HIV. Nutrition is an easy and inexpensive adjunctive therapy to ART. It can delay disease progression and improve clinical outcome in HIV in the developing countries. Nutrition supplementation among adolescents with HIV has been studied by several scientists in different countries. However, many centres catering to adolescents with HIV do not emphasize on nutritional supplementation along with HAART. This RCT was done to emphasize on nutritional supplementation in addition to good compliance with HAART.

OBJECTIVES:

1) To assess the effect of nutrition supplementation on the outcome of illness among adolescents with HIV on HAART. The parameters studied were: Immunological outcome - CD4 levels, Nutritional status - Weight, Height and Body mass index, Quality of life - Number of episodes of illness over the 6 month period.

2) SETTING: a) Adolescent Medicine Clinic, Paediatrics Unit 3

b) Infectious diseases clinic, CMC

d) ACTFID, ART centre, CMC Vellore and ID clinic, CMC, Vellore.

3) METHODS: The patients enrolled in the study were already on a baseline supplementation of 65 calories and 3.2 gm of protein per day, in addition to their daily dietary intake. The study participants were randomized into two arms of 40 each. A supplementation arm and a Placebo arm. Supplementation arm received an additional macronutrient supplementation of 400 calories and 15gms of protein per day and multivitamin tablets containing micronutrients. Placebo arm received similar appearing powder with 100 calories and 2 gm of protein per day and a similar looking tablet like the multivitamin tablet. Baseline information about the nutritional status was acquired by a 24 hour recall methods. Baseline parameters like weight, height, BMI, CD4 levels, triglyceride levels, Number of illnesses were documented. They were reassessed at the end of three months and six months respectively.

RESULTS: There was no rise in CD4 levels at the end of 3 months and six months. BMI in the supplementation group increased from 16.5 to 17.5 in comparison to placebo group.(p value - 0.036).

There was a decrease in triglyceride levels from 99.2 to 81 in the supplementation group (p value - 0.028). There was an increase in hemoglobin in the supplementation group which was not statistically significant.

Number of episodes of illness decreased from 32.5% to 0 in the supplementation group and from 20% to 2.9% in the placebo group.

CONCLUSIONS

Nutritional supplementation in adolescents with HIV is essential for good outcome in terms of weight and BMI, which is an important predictor for improvement in HIV / AIDS. The number of episodes of illness can be reduced in these patients with better nutrition.

Keywords: HAART, nutrition, outcome