An article entitled “Vitamin supplements, socioeconomic status, and morbidity events as predictors of wasting in HIV-infected women from Tanzania” was published in the American Journal of Clinical Nutrition (2005;82:857-65).

Background:

Wasting is one of the strongest independent predictors of mortality in HIV-infected adults and is also related to accelerated disease progression, adverse pregnancy outcomes and a higher risk of mother-to-child HIV transmission. Vitamin supplements effectively delay HIV disease progression, improve CD4+ cells counts, and reduce viral load but little is known on their effect on wasting.

Objectives:

The present study looks closely at the effects of vitamin supplements on wasting as well as the risk factors for wasting including sociodemographic characteristics, morbidity events and immunologic progression.

Design:

A total of 1,078 HIV-1 infected women from Tanzania were enrolled in the study between April 1995 and July 1997. The women were followed until August 2003 when the trial ended. They were assigned to 1 of 4 treatment groups: vitamin A plus β-carotene; multivitamins (B complex, C and E); multivitamins and vitamin A plus β-carotene, or placebo. All of the women received folic acid, iron and malaria prophylaxis during pregnancy. Antiretroviral medications were not available in the study setting at the time of the study. In September 2000, the vitamin A plus β-carotene supplement was dropped based on the recommendation of the data and safety monitoring board because of its apparent potential to increase HIV transmission from mothers to their children. Women who were assigned to receive the vitamin A plus β-carotene with or without the multivitamins were assigned to receive either placebo alone, or with multivitamins. At the first prenatal care visit, anthropometric data, as well as socioeconomic data was collected and women received a complete medical examination. Midupper arm circumference (MUAC), body mass index (BMI) and body weight were evaluated at each visit. Study endpoints included first episodes of a MUAC<22cm and or BMI<18. A secondary endpoint was a weight loss>10% from weight recorded at baseline and an additional secondary endpoint was the incidence of weight loss periods during follow-up, classified according to their duration and severity. Long periods of weight loss were defined as those lasting >4 months, short periods lasted<4 months. Severe periods of weight loss were defined as weight loss>1kg/month and moderate periods were defined as a weight loss of <1kg/month.

Results:

Supplementation with a multivitamin significantly reduced the risk of wasting when measured as a decline in MUAC, and increased the number of circulating CD4+ cells. The multivitamins did not have a significant effect on BMI or weight loss. An inverse association was noted between the level of education of the women and the wasting, when measured as either MUAC<22cm or a BMI<18, which persisted after adjustments for possible confounders.

Conclusion:

Supplementation with a multivitamin reduces the risk of wasting. The authors support the recommendation of long-term daily supplementation in HIV-infected persons at the doses used in this trial. The authors urgently recommend studying the potential benefits of multiple recommended allowances of the vitamins on health and survival of HIV-infected individuals. They also recommend studying the potential benefits of providing multivitamins to HIV-uninfected women who attend
prenatal care. The association between the level of education of the women and wasting supports the argument to invest in increased access to formal education for girls in developing countries.