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REVIEW ARTICLE

Micronutrients in HIV-positive persons receiving highly active antiretroviral therapy[1,2,3]

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In HIV-infected persons, low serum concentrations of vitamins and minerals, termed micronutrients, are associated with an increased risk of HIV disease progression and mortality. Micronutrient supplements can delay HIV disease progression and reduce mortality in HIV-positive persons not receiving highly active antiretroviral therapy (HAART). With the transition to more universal access to HAART, a better understanding of micronutrient deficiencies and the role of micronutrient supplements in HIV-positive persons receiving HAART has become a priority. The provision of simple, inexpensive micronutrient supplements as an adjunct to HAART may have several cellular and clinical benefits, such as a reduction in mitochondrial toxicity and oxidative stress and an improvement in immune reconstitution. We reviewed observational and trial evidence on micronutrients in HIV-positive persons receiving HAART to summarize the current literature and suggest future research priorities. A small number of observational studies have suggested that some, but not all, micronutrients may become replete after HAART initiation, and few intervention studies have found that certain micronutrients may be a beneficial adjunct to HAART. However, most of these studies had some major limitations, including a small sample size, a short duration of follow-up, a lack of adjustment for inflammatory markers, and an inadequate assessment of HIV-related outcomes. Therefore, few data are available to determine whether HAART ameliorates micronutrient deficiencies or to recommend or refute the benefit of providing micronutrient supplements to HIV-positive persons receiving HAART. Because micronutrient supplementation may cause harm, randomized placebo-controlled trials are needed. Future research should determine whether HAART initiation restores micronutrient concentrations, independent of inflammatory markers, and whether micronutrient supplements affect HIV-related outcomes in HIV-positive persons receiving HAART.

Key Words: Vitamins • minerals • micronutrients • selenium • HIV AIDS • highly active antiretroviral therapy • HAART

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