Gulu Referral Hospital

Study of the Effects of ColoPlus® in the Treatment of Patients with HIV- associated Diarrhœa in Northern Uganda.

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Fostering Partnership in the Fight Against HIV/AIDS in Uganda

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Executive Summary

Background

HIV/AIDS continues to be a major public health problem the world over. Globally, an estimated 33 million people were living with HIV in 2007; with about 2.7 million new infections occurring in the same year [UNAIDS 2008]. Over 95% of these live in the developing world, especially in sub-Saharan Africa. Women continue to be disproportionately infected and affected by HIV.

The over two decade HIV/AIDS epidemic in Uganda reached its peak in early 1990's with the average national antenatal HIV prevalence of 18% in rural areas and 25-30% in major urban areas [UNASS 2007]. Over the years, Uganda has registered great success in steadily reducing the prevalence of HIV, although the rate is now stagnating at about 6.5%. HIV Infection rates in northern Uganda has remained well above the national average. Recent figures show a tendency to increasing new infections in Uganda especially among widowed, cohabiting and married persons [UNGASS 2007]. Innovative efforts are needed to strengthen and scale up prevention, treatment, care and support programmes.

HIV-associated diarrhœa, usually persistent or recurrent, is a common manifestation in all patients with acquired immunodeficiency syndrome (AIDS) in developing countries. This coupled with inadequate food availability in households of poor people infected and affected with HIV, often leads to malnutrition and worsening of HIV disease. Most of these patients do not readily have access to anti-retroviral therapy and therefore depend on prolonged or frequent treatments with antibiotics, anti-diarrhœa agents, and fluid and electrolyte replacements. Such use of antibiotics often leads to emergence of drug-resistant enteric pathogens.

Nutritional interventions have been proven to be a key component of comprehensive management of HIV/AIDS patients. ColoPlus is a nutritional product made from bovine colostrum, the first milk that a suckling calf receives

from the cow within 48 hours of birth. It is rich in nutrients, immunoglobulin, growth factors and peptides that have anti-bacterial effects. Florén et al demonstrated that ColoPlus alleviates HIV-associated diarrhœa, although their study did not have a comparison group. ColoPlus is internationally patented.

Study description and Methods

This is the first randomized controlled trial that evaluated the effect of ColoPlus in the management of patients with HIV-associated diarrhœa. The study was conducted between October 2007 and June 2008 in Gulu and Amur districts of northern Uganda. The specific objectives were to determine the effect of ColoPlus:

1. In reducing frequency of stool evacuations in patients with HIV-associated diarrhœa.
2. In reducing self-estimated fatigue in the study patients.
3. On the nutritional status of the study patients.
4. On the immune response (change in CD4+ cell counts) in the study patients.

A total of 87 adult patients with HIV-associated diarrhœa were recruited at Gulu Regional Referral Hospital and outreach clinics located in four internally displaced persons' camps (Unyama, Awer, Pagak and Parabongo). Forty five patients received 50mg of ColoPlus twice a day for 4 weeks in addition to other anti-diarrhœa treatment as clinically indicated. Another group of 42 patients received only the routine anti-diarrhœa treatment. Patients in both groups were followed up for 9 weeks. The effects of ColoPlus on daily stool frequency, fatigue, body weight, body mass index, serum albumin, and haemoglobin levels were evaluated at weeks 1, 4 and 9 of treatment. Baseline CD4+ cell count measured at enrollment was compared with the count at 9 weeks.

The study received ethical approvals and clearance from the Research Committees of Gulu University Faculty of Medicine, Lund University, Uganda National Council for Science and Technology, and Uganda National Drug Authority.

Findings

Overall, the average age of study participants was 36.7 years. Sixty nine percent of the study participants were women, 20% had no formal education and up to 90% did not go beyond primary education.

In patients who received ColoPlus, there was a significant decrease in daily stool frequency from an average of 7.5 motions per day to 1.3, representing a reduction of 83% over the study period. Patients who did not receive ColoPlus on the other hand had a 60% reduction in stool frequency, with the average number of motions reducing from 6.9 to 2.7 per day. On the average, diarrhœa (stool frequency of more than 3 motions/day) ceased by day 7 for patients receiving ColoPlus and stool frequency remained normal up to week 9, five weeks after stopping ColoPlus (Figure 1). However, patients who did not receive ColoPlus on average took about 21 days to have achieved normalization of stool frequency.

Participants on ColoPlus further reported greater improvement in their feeling of wellbeing, reporting less fatigue compared to those who never received ColoPlus. Self-estimated fatigue remarkably reduced by 85% for patients on ColoPlus compared to 43% for the controls during the study period.

Study participants on ColoPlus were more likely to gain weight than those who did not receive ColoPlus. There was 11% increase in the average weight and body mass index (BMI) of patients on ColoPlus by week 9. No significant change in these measures was observed for patients in the control group.

There was a demonstrable increase in the mean CD4+ cell count by 14% for patients on ColoPlus in contrast with a 12% decrease in CD4+ count for those who did not receive ColoPlus over the same period.

The study however did not show any significant beneficial effect of ColoPlus on serum albumin and haemoglobin levels over the follow-up period.

Conclusion and Recommendations

This randomized controlled trial provides strong evidence that bovine colostrum, administered as ColoPlus, is effective in treating HIV-associated diarrhœa. ColoPlus also remarkably reduces fatigue levels thereby improving patient quality of life, wellbeing and functionality. Patients receiving ColoPlus achieved significant weight gain and immunological response.

Although ColoPlus administration does not replace the use of anti-retroviral drugs, antibiotic therapy or septrin prophylaxis for patients who clearly need them, it can delay the initiation of ARVs; reduce the need for antibiotics and anti-diarrhœa agents; and improve nutritional status of HIV/AIDS patients if incorporated as a component of comprehensive HIV/AIDS care programmes.

We recommend a wider use of ColoPlus as an innovative therapeutic food product in the management of people living with HIV /AIDS, especially those with persistent diarrhœa and HIV wasting syndrome. A large scale phase IV trial is recommended in scaling up ColoPlus product while at the same time offering the already proven therapeutic benefits to patients in need.

Nutritional Innovation for People Living With HIV/AIDS.

Findings From Northern Uganda.