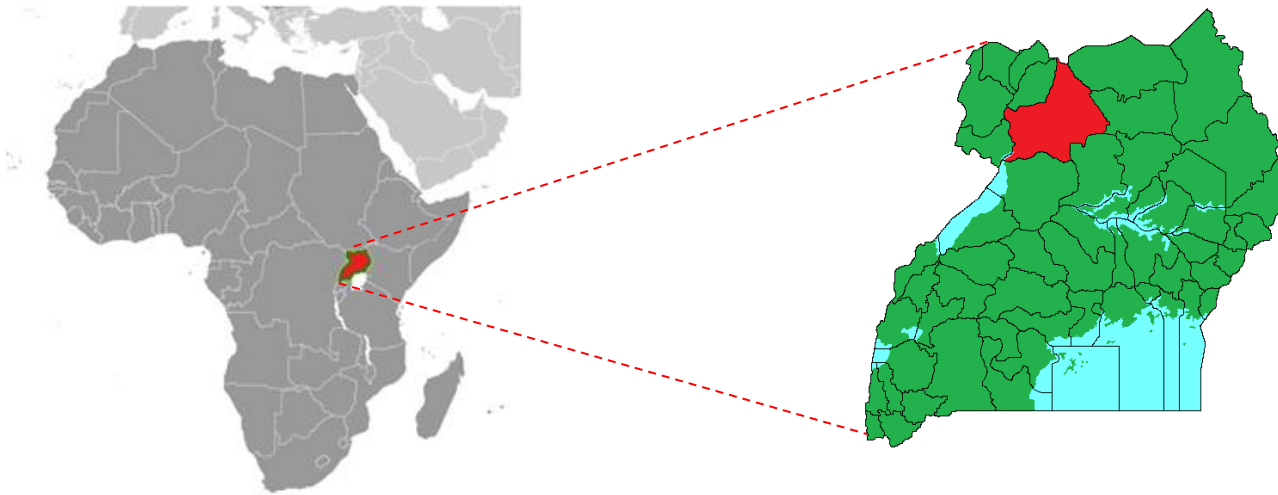


*Effect of bovine colostrum-based food
supplement in the treatment of
HIV-associated diarrhea in Northern
Uganda: A randomized controlled trial*

Published: Indian Journal of Gastroenterology

DOI 10.1007/s12664-011-0146-0

HIV/AIDS in Gulu District, Uganda



Uganda:

- Population 33.8 million
- Life expectancy 52 years
- 1.2 million living with HIV/AIDS (2009)
- 6.5% adult HIV prevalence
- 64,000 AIDS-related deaths (2009)

Gulu District:

- Population (approximately) 300,000
- 90% of the population has been displaced, mostly into camps
- Hard hit by HIV/AIDS - 11.9% adult HIV prevalence

Diarrhoea and malnutrition in HIV/AIDS patients

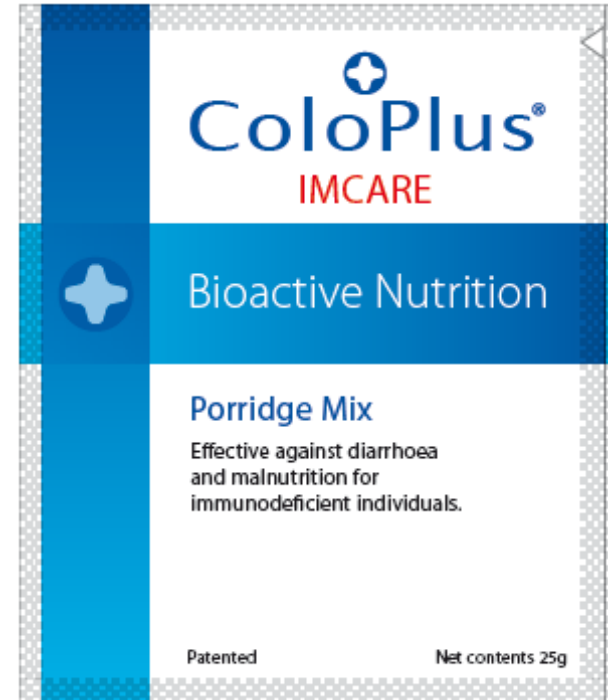


HIV-infected patients commonly suffer from chronic diarrhoea and malnutrition

- HIV causes a slow destruction of the immune system including the gastrointestinal tract
- Opportunistic infections occur in the intestine with diarrhoea as a direct consequence
- Enteric pathogens in HIV-associated diarrhoea are, for example, Cryptosporidium, Amoeba and Campylobacter species
- Diarrhoea causes life-threatening malnutrition and fatigue
- Only 35% of HIV-associated diarrhoea improve with antibiotic therapy

ColoPlus® *IMCARE* for HIV/AIDS patients

- ColoPlus® *IMCARE* is a bovine colostrum-based functional food product
- Bovine colostrum contains high concentrations of beneficial antibodies, peptides, growth factors and micro-nutrients
- Colostrum antibodies (immunoglobulins) are effective against a wide range of bacterial, viral and protozoa pathogens and toxins
- ColoPlus® *IMCARE* has been specifically formulated to be effective in the gastrointestinal tract
- A 2005 open-labelled observational study in Nigeria indicated significant clinical effects in HIV/AIDS patients supplemented with ColoPlus® *IMCARE*



An open-labelled, randomized clinical trial with ColoPlus® *IMCARE* in Gulu, Uganda.

Published: *Indian Journal of Gastroenterology*

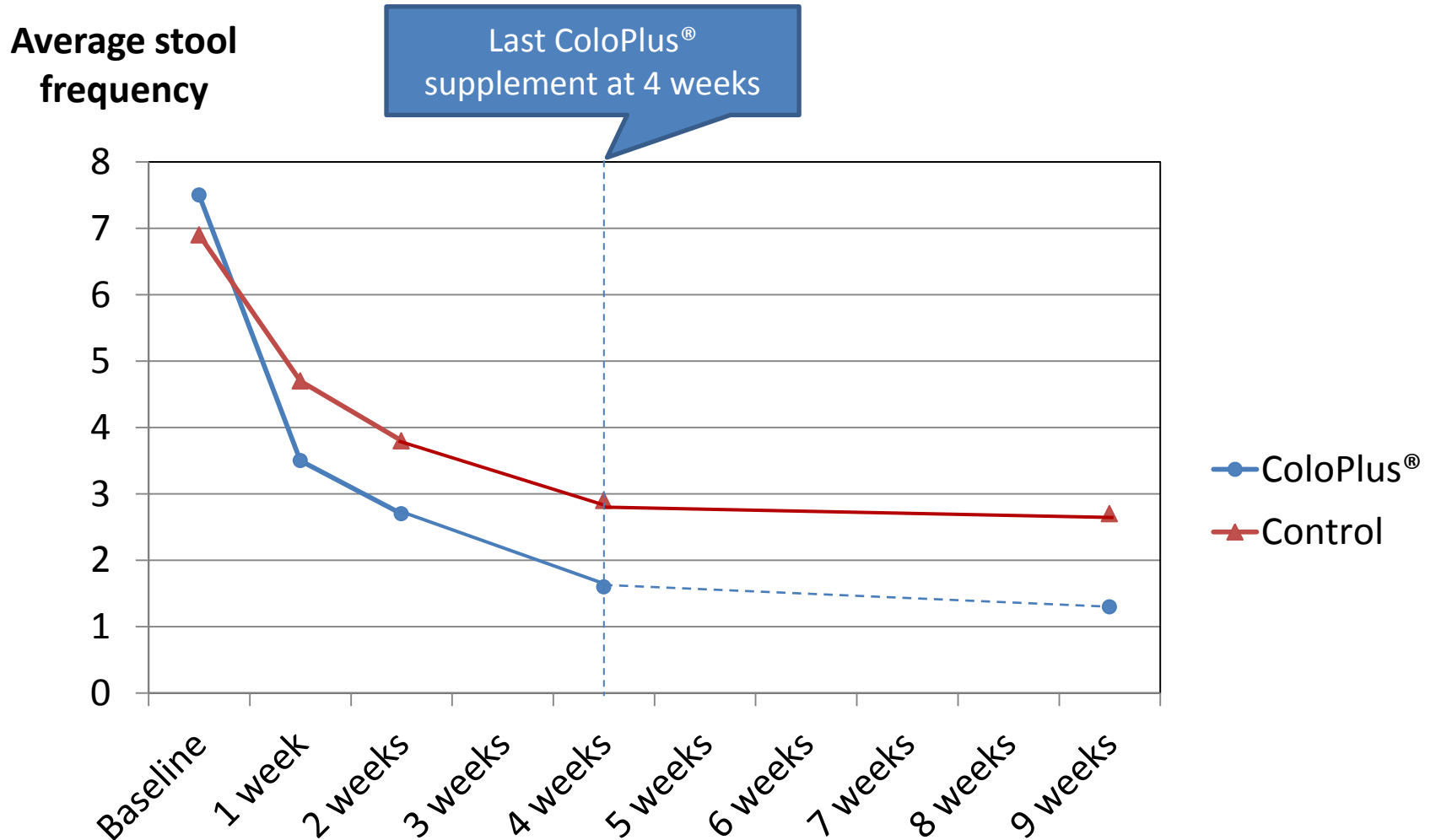
DOI 10.1007/s12664-011-0146-0



Randomized, single blind, controlled trial of adding ColoPlus® *IMCARE* to a standard anti-diarrhoea treatment for HIV/AIDS patients:

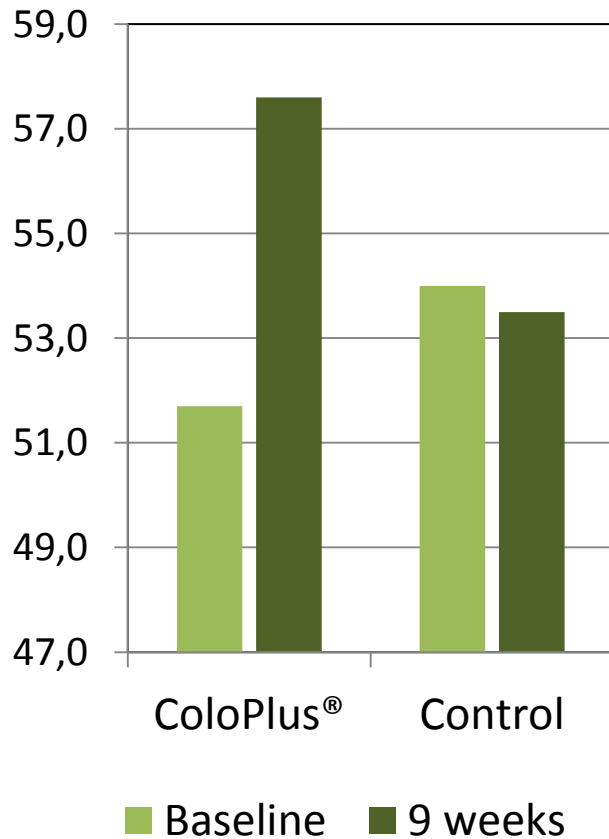
- **87** adult patients with HIV-associated diarrhoea recruited at Gulu Hospital and community clinics in Northern Uganda
- **45** patients randomized to receive 50g ColoPlus® twice daily for four weeks (+ standard anti-diarrhoea treatment)
- **42** patients received standard anti-diarrhoea treatment alone (= control)
- Patients were followed up for 9 weeks - recording stool frequency, body weight and BMI, self-reported fatigue (VAS score) and CD4+ count

Effect of ColoPlus® *IMCARE* on diarrhoea

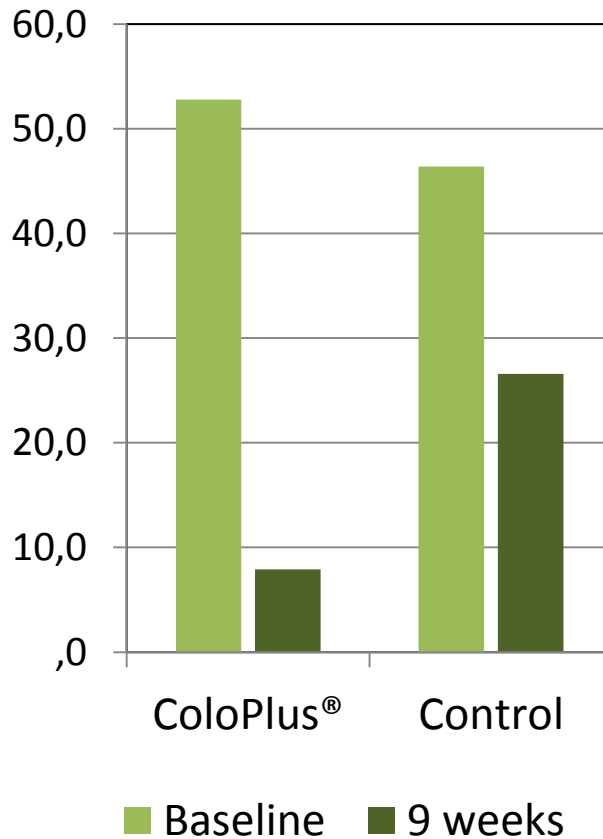


Effect of ColoPlus® *IMCARE* on weight, fatigue and immune function

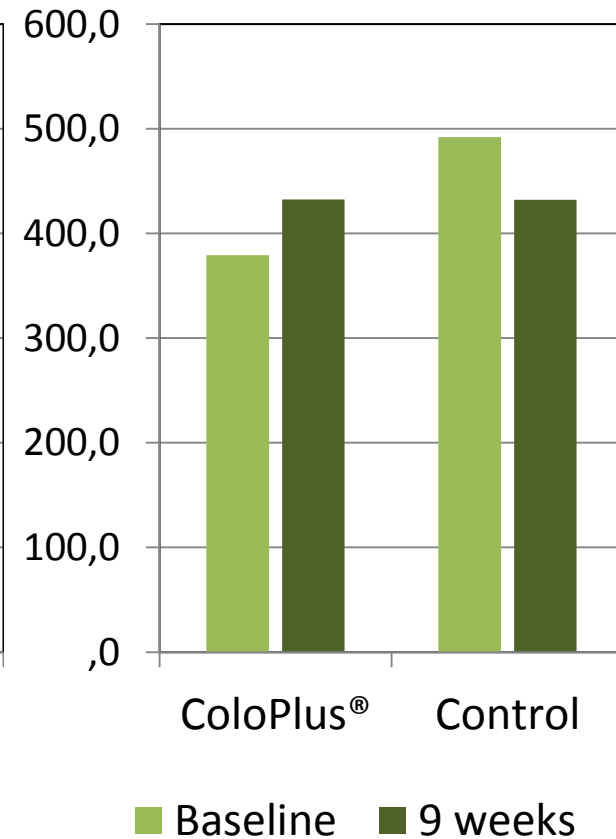
Average body weight (kg)



Average self-reported fatigue (VAS score)



Average CD4+ count (per µl)



Results of clinical trial with ColoPlus® *IMCARE*

After 9 weeks:

- J **Diarrhoea alleviated** = mean stool frequency ↓ **79%** (control ↓ 58%)
- J **Improved energy levels** = self-reported fatigue ↓ **85%** (control ↓ 43%)
- J **Normalised body weight** = body weight and BMI ↑ **11%** (control N/C)
- J **Improved immune function** = CD4+ count ↑ **14%** (control ↓ 12%)