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Treatment of parasitic infection in HIV-1 co-infected patients decrease HIV plasma load

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Abstract

Background: It is recognized that HIV progression to AIDS is facilitated by a chronic immuneactivation characterized by accelerated depletion of CD4+T cells and increase of viral load. Therefore, suppression of immuneactivation may have a major impact on the spread and progression of HIV infection. Parasitic infestations, known to cause chronic immuneactivation in the gut, are common in India. Here, we present the first study from India to investigate whether suppression of intestinal parasitic infection in HIV-1 co-infected patients lead to decrease in plasma load.
Material & Methods: Study population consisted of 378 HIV-1 patients presenting with diarrhea at AIIMS, New-Delhi. Parasites were detected in faecal samples using standard techniques. Viral load, CD4+Tcells were quantified and specific antiparasitic treatment (Co-trimoxazole, Nitazoxanide and Ivermectin) prescribed.
Results: The total parasite positivity was 38.3%. Amongst the intestinal protozoa, Isospora belli (19.6%) predominated the spectrum followed by Cryptosporidium (7.4%). Forty individuals infected with either Isospora belli, Cryptosporidium or Strongyloides stercoralis and without other co-infections were selected for a longitudinal follow-up of 3-4 weeks. Statistically significant decrease in plasma load was observed (p=0.0001) following successful antiparasitic treatment, with mean decrease of 0.46 log10. Although insignificant, there was an overall trend for immunological benefit with modest increase in CD4+Tcell count.
Conclusion: Hence, treatment of opportunistic intestinal parasites leads to decrease in plasma load. Observed results are in agreement with the studies performed in sub-Saharan Africa. The decrease of immuneactivation induced by suppression of parasitic infection may be the common cause of the decrease of plasma load in both studies.

Biography

Hafiz Ahmad's Ph.D. work at All India Institute of Medical Sciences, New-Delhi, focused on intestinal parasitic co-infections in patients with HIV/AIDS and their effect on CD4+ T cell count, viral load and antiretroviral drug resistance. He is actively involved in HIV patient care and has received awards in various conferences. His research team has twice received Indian Association of Medical Microbiologists - Delhi Chapter best poster award on Cryptosporidium morphovariation and Cryptosporidium muris detection in HIV infected patients. He has also co-authored a book chapter on "Opportunistic infections in AIDS" published by Association of Physicians of India. At AIIMS, he specializes in detection of coccidian parasites, HIV viral load testing, HIV drug resistance analysis and DNA sequencing. He has also been awarded with the prestigious National Institute of Health (NIH) Fellowship in 2009 at Dr Margolis' lab. in Bethesda, where he worked on HIV pathogenesis, ex-vivo 3D tissue culture and role of Herpes viruses on HIV transmission. Currently he is working as a senior research fellow and has contributed to 12 scientific publications in national and international peer reviewed journals.