Anemia in HIV-Positive Children in a Tertiary Care Center in Northeast India: Prevalence and Risk Factors

Gayatri Bezboruah¹ · Chiranjeet Narayan Dev¹ · Amrita Chakraborty¹ · Manjunatha¹

Received: 4 March 2021 / Accepted: 7 June 2021 / Published online: 2 July 2021
© Dr. K C Chaudhuri Foundation 2021

To the Editor: Anemia has shown to influence the natural history of HIV disease by accelerating the disease progression and increasing mortality in both developed and developing countries [1]. Our cross-sectional study done on 104 children enrolled in the ART center of GMCH was conducted to determine the prevalence and identify risk factors associated with anemia in HIV-positive children.

The prevalence as well as severity of anemia was found to have a major predilection for rural population, and the results were statistically significant ($p < 0.05$). Thus, nutritional programs aimed at improving quality of life among HIV-infected children must take into account their relevance in rural settings in India [2]. Mother-to-child transmission (MTCT) of 94% in our study indicates the rationale for intensifying efforts to get MTCT services to the large number of women needing it, to achieve a better control on pediatric HIV infection.

The prevalence and severity of anemia was found to be significantly higher ($p < 0.05$) in the more advanced stages of the disease. Compared to elder age group, preschool children had a higher prevalence of anemia.

Malnutrition was found to be an important risk factor of anemia, and the results were found to be significantly higher in children who were underweight ($p < 0.001$).

Our study reaffirms that anemia is a major manifestation of HIV-infected Indian children and the results are significant. Identifying the common risk factors for anemia and devising appropriate policies can guide appropriate therapeutic interventions. Therefore, as a routine measure, health-care providers of these children must routinely assess the nutritional status as well as hematological parameters before and after the initiation of ART. Survival in HIV-infected

individuals may be improved with identifying the cause of anemia and treating it [3]. Adequate treatment with iron folic acid and supplements may also be taken as a routine measure in pediatric HIV patients [4].

Declarations

Ethics Approval Written informed consent was obtained from the guardians of the children with approval from Institutional Ethics Committee of GMCH.

Conflict of Interest None.

References

1. Mocroft A, Kirk O, Barton SE, et al. Anaemia is an independent predictive marker for clinical prognosis in HIV-infected patients from across Europe. *Aids*. 1999;13:943–50.
2. Shet A, Mehta S, Rajagopalan N, Dinakar C, Ramesh E, Samuel NM. Anemia and growth failure among HIV-infected children in India: a retrospective analysis. *BMC Pediatr*. 2009;9:37.
3. Semba RD, Shah N, Klein RS, Mayer KH, Schuman P, Vlahov D. Human immunodeficiency virus epidemiology research study group. prevalence and cumulative incidence of and risk factors for anemia in a multicenter cohort study of human immunodeficiency virus-infected and-uninfected women. *Clin Infect Dis*. 2002; 34:260–6.
4. Semba RD. Iron-deficiency anemia and the cycle of poverty among human immunodeficiency virus-infected women in the inner city. *Clin Infect Dis*. 2003;37(Suppl 2):S105–11.

Publisher's Note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

✉ Chiranjeet Narayan Dev
dev.chiranjeet@gmail.com

¹ Department of Pediatrics, Gauhati Medical College, Guwahati, Assam, India