Zonal wide time trend analysis estimation of viral load undetectable state and its predictors among HIV infected children at South Gondar health institutions, Northwest, Ethiopia, 2023: A 8 years retrospective cohort study

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Abstract (300 word limit)

Objectives: To examine the zonal-wide time trend analysis estimation of viral load undetectable state and its predictors among HIV-infected children at South Gondar health institutions, 2023.

Design: A retrospective cohort study

Setting: South Gondar Health Institutions, Northwest, Ethiopia.

Participants: We recruited 430 HIV-infected children who had a follow-up at the ART clinic at health institutions from June 1, 2016, to April 30, 2023.

Outcome measures: The primary outcome measure of this study was the time trend analysis estimation of viral load undetectable state. Moreover, the study assessed the median time viral load undetectable state and its predictors by the Cox-proportional hazard model. Data were entered into Epi-data 4.2 and exported to STATA version 17 statistical software for analysis.

Results: The mean follow-up period was 8.5(95% CI: 8.1-8.9) ±4.4 SD months, overall yielding 9,151 child-month observations. At the end of the follow-up, 369 [85.8%, 95% CI: 82.6% to 88.8%] of the children achieved viral load undetected state. Moreover, the overall median survival time to develop viral load undetectable state was 6 months. CD4 count above threshold [AHR: 2.8 (95% CI: 1.5, 5.3)], fair/poor level of ART adherence [AHR: 2.0 (95% CI: 1.1, 3.9)], no treatment failure [AHR: 3.0(95% CI: 1.1, 4.0), and nutritional status <-2 Z score [AHR: 2.3(95% CI: 1.3, 4.0)].

Conclusion: The viral load undetectable state was found to be low as compared to the WHO strategic plan (95–95-95 target by 2025). Children whose nutritional status ≥ -2 Z score, no treatment failure, CD4 count above the threshold level, and WHO stage I&II were significant predictors of achieving viral load undetectable state. Hence, it is better to give a great emphasis on those predictor variables to chive the WHO strategic plan

Photograph



Image

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I am an enthusiastic Ethiopian senior lecturer and researcher specializing in children, neonate, and maternal health. My dedication to continuous learning enables me to provide high-quality, evidence-based education to my students. As part of my position, I have a range of tasks includes writing grant proposals, mentoring MSc and BSc students in their research projects, conducting research, publishing articles, participating in research committees, establishing collaborations, presenting findings at conferences, providing clinical services, offering training on statistical models and study designs, and reviewing and providing feedback for esteemed academic journals. I have 80 published articles, with 15 as the principal investigator author. All articles were published in reputable journals indexed in pub-MED, SCOPUS, or MEDLINE. Among them, 55 were in Q1 journals, 14 in Q2 journals, and 11 in Q3 journals

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