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Not peer-reviewed version

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Posted Date: 14 December 2023

doi: 10.20944/preprints202312.1031.v1

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Short Note

Challenges in Monitoring Anti-Retroviral Therapy (ART) Clients in Developing Countries: A Comprehensive Narrative Review

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Abstract: Monitoring of clients living with HIV encompasses a specific array of activities that routinely check on various aspects of ART following its initiation depending on the availability of resources in that particular state, among other factors as per guidelines from the World Health Organisation. This is a significant practice as it promotes positive health outcomes for patients and efficient utilisation of ART regimens to reduce resistance to the medication – hence it is a measure to guard avoidable costs. It also forms a basis on which decisions are made from. It can be done clinically by assessing for signs e.g., skin rash and symptoms e.g., nausea and vomiting, checking vital organ function and measuring weights across all populations, or can be also be done by assessing specimens for their respective viral loads, white blood cell count, pregnancy status or other infections such as hepatitis B. There have not been any special indications required for one to be eligible for monitoring during ART in developing countries; all qualify for routine monitoring even though some may be more frequent than others in cases of comorbidities such as renal failure where medications can be attributed to exacerbating the condition.

Keywords: HIV; AIDS; STDS; ART

HIV infection is a menace to Africa; since the introduction of anti-retroviral therapy (ART) and increased rolling out of ART medication, there has been a measurable decline in HIV-related mortality, patient care has been improving mostly due to the Monitoring of clients on anti-retroviral therapy (ART), which is a fundamental ongoing set of activities that are employed in caring for people living with Human Immuno-deficiency virus (PLWH) from the point of initiating ART[1]. It has found itself as a way of maximising client care and management while minimising harm. These activities assess the therapeutic responses from clients and identify any adverse events related to the life-long administration of medication, thus ensuring proper utilisation and efficiency of ART. Monitoring is also a tool for identifying treatment success or failure thus improving and promoting positive patient health outcomes and patient safety[2]. Monitoring of clients on ART forms the basis of decision making especially in developing countries which are also heavily laden with the burden of HIV cases; For instance, if a regimen is found to be causing more adverse events e.g., severe liver damage (hepatotoxicity)[3], alternative interventions such as switching ART regimen can be employed to promote good health outcomes for clients; or if a client's viral load is found to be skyrocketing despite treatment, this might call for enhanced adherence counselling or choosing a more effective regimen – all this stems from findings during client monitoring[4]. Overall, client health is improved, the risk of developing resistance to treatment and the risk of transmitting the disease to the next person is reduced.

The recommended approaches in monitoring of clients on ART include both clinical and laboratory monitoring, including surveillance of safety/for adverse outcomes associated with treatment use in adults, pregnancy, lactation and children (anaemia). Laboratory monitoring include baseline and routine monitoring of CD4 lymphocytes (CD4 count) and viral load monitoring, pregnancy test if indicated in sexually active adolescent girls and adults, white blood cells count,

haemoglobin measurement. Clinically, the following can be done in monitoring: clinical staging of disease, growth monitoring (weight and height measurements), nutritional status, concurrent medications administered including herbal medication, identifying comorbidities e.g., diabetes mellitus, screening for other infectious diseases such as malaria and tuberculosis (TB)[5], [6].

However, developing countries still face barriers to this process, hence monitoring has not found its roots completely due to several reasons that are mentioned below: To begin with, in developing countries, there is poor resource mobilisation with underdeveloped infrastructure. This has been a major challenge in implementing monitoring strategies for clients living with HIV. First, some of the healthcare facilities are still not modernised in terms of equipment that is functioning in the facility, this not only impacts the results from these machines but also impacts the subsequent critical decision-making arising out of the interpretation of such results which could alter and encourage poor health outcomes for the clients being monitored, therefore, the quality of monitoring offered in these developing country centres is also substandard [7], [8].

Systems involved in the care for PLWH are complex and susceptible to corruption. In some places, there are stakeholders that have made a decision to commit to only supplying equipment for the national laboratories for laboratory monitoring e.g., viral load testing, such that machine procurement issues are eliminated but the actual installation and functioning of the such equipment rests on the local authorities[9]. The corruption has led to machines lying idle in the laboratories without any utilisation because there is lack of funds to either pay for the staff to operate such machines or to pay for the recommended servicing of such machines. In such places, it has been noted that even though machine procurement is not a problem, utilisation rates are low as some machines once they break down, are not repaired; some machines are not installed properly to begin functioning while some areas lack reagents to perform the required services for monitoring, e.g., for patients with comorbidities such as renal failure and diabetes mellitus, urea, creatinine and electrolyte tests are required on regular basis to check for nephrotoxicity and other complications of comorbidities, but these cannot be carried out because there are no reagents to process specimens from clients.

The complex systems also determine the allocation of machines to the catchment areas; however, there some areas end up with more machines relative to the expected numbers of specimens (under-utilisation) while some areas end up receiving inadequate supply of machines relative to the enormous expected number of specimens – this heavily impacts the monitoring system such that only clinical monitoring i.e., weight and height measurement, opportunistic infection screening using screening tools e.g., TB screening tool: cough in the last 21 days, fever or weight loss, are done without proper viral load testing as per World Health Organisation (WHO) guidelines. Viral load samples are supposed to be tested 6 months following initial initiations of treatment then done at annual intervals; but in these areas, these recommendations end up being compromised[10].

Notably, there is limited trained staff at all levels of healthcare centres to perform the monitoring services in full as per WHO guidelines; the few trained staff members no longer get the routine re-training. This limits the number of machines that are functional and also increases the burden of patient-to-staff ratios. Because of the short staffing, machine procurement is affected as accurate numbers of specimens cannot be ascertained due to lack of staff to do a proper assessment on the ground per healthcare centre. In addition, in some areas, shortage of driving staff has led to centralisation of services in healthcare facilities in this modern day and age such that patient factors begin to rise and affect the monitoring process in PLWH; some countries have tried to decongest the healthcare centres by decentralising the monitoring services up to the community level but this also has found itself with shortcomings because of the lack of incentives to motivate the community involved in the monitoring system such that some clients are deprived of benefits that come with the monitoring services. Short staffing also leads to inadequate essential HIV counselling offered to the clients[11].

Meanwhile, some countries have the resources but the systemic management is so poor; the data to be collected during monitoring process and how it is stored is still of great concern because some programs for HIV stem from the information obtained during the monitoring process.

However, challenges in monitoring ART treatment in PLWH can also be patient-based[12]. There are still negative attitudes towards HIV and ART itself by some communities which promotes poor adherence to the prescribed days of healthcare centre visit for monitoring by clients because of the poor insight concerning issues to do with HIV and its treatment. Some clients, because of their good physical health, do not feel obliged to come for routine monitoring in the healthcare centres as they “feel good”. Poor healthcare centre visits are also affected by the amount of stigma that some countries still carry in their communities such that clients are discouraged to come out in the open to be seen frequently visiting the healthcare centres as they fear that they may be treated differently or shamed e.g., in some communities, it is still believed that everyone with HIV has a history of sexual promiscuity. Stigma has also restricted the amount of patient information obtained from clients and fuelled fear for confidentiality breach, such that the information on the client is inadequate to do a home-follow up. As such, few clients come for monitoring of side effects or even screening and this is exacerbated by the fact that some centres allow collection of medication on behalf of clients by relatives or caregivers[13], [14].

Client ignorance has been a great challenge in monitoring treatment of HIV; some clients will be difficult without any apparent reason and this has led poor turnups in the healthcare centres as well. Some clients will still hold a belief that the tests are lying to them, hence once they are initiated on ART, they cannot be followed up because they also will no longer want to cooperate with the healthcare system. The distance from the healthcare facilities to access these services plus centralisation of services to healthcare centres has been associated with the long waiting hours before being served which have had a significant role as they account for the decisions to incur indirect costs related to ART, of which some clients come from poor backgrounds and cannot afford to pay for the associated transportation to the facilities and additional tests to rule out comorbidities e.g., HbA1c test for diabetes mellitus[15]. In Africa, spirituality and religion are major determinants of health seeking behaviours; some religious sects prohibit health facility visits and women still have to seek permission of visit healthcare facilities from their husbands who, the majority of them are against visiting healthcare centres, making routine monitoring difficult and haphazard[16], [17]. Last but not least, some clients have demonstrated a serious lack of knowledge regarding the importance of monitoring during treatment and this is also partly contributed by inadequate counselling during the initiation of ART[18].

Conclusion

Despite the existing guidelines from the WHO on monitoring clients on ART, developing countries still face barriers in carrying these activities out. These challenges faced in carrying out these activities arise from the service delivery healthcare centres and policies in place (systematic factors), while some challenges are patient-based and these are numerous compared to the former challenges mentioned. Efforts should however be made in order to meet the required standards of monitoring even in developing countries as these activities form the backbone from where decisions concerning treatment of PLWH arise, which could positively or negatively impact patient health outcomes and patient safety.

Ethical Statement: Being a Short note, there were no ethical issues and IRB permission is not required.

Conflicts of interest: The authors declare no conflict of interest.

Funding and Sponsorship: None of the authors have a financial interest in any of the products, devices, or drugs mentioned in this manuscript.

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