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HIV-1 viral load monitoring: an opportunity to reinforce treatment adherence in a resource-limited setting in Thailand

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Summary This paper describes a program to increase patients' treatment literacy regarding viral load (VL) monitoring through patient education materials and a counseling protocol, implemented by peer counselors, in order to reinforce adherence to first-line treatment. VL monitoring and second-line antiretroviral treatment were introduced into an established first-line treatment program in a rural district hospital in Thailand. All patients (171 adults and 14 children) taking antiretroviral treatment for more than 6 months participated and those with detectable VL were targeted for additional adherence support. The main outcome measure recorded was the number of detectable results becoming undetectable after counseling. Four adults and one child had a persistently high VL and switched to second-line treatment. Of 51 adults (30%) with an initial low detectable VL, 47/51 identified likely explanations, usually linked with poor adherence. Following counseling, VL became undetectable in 45/51 cases and some patients could resolve long-standing psychosocial problems. We conclude that HIV-1 VL monitoring together with targeted counseling for patients with detectable VL can promote adherence to treatment, providing an opportunity to delay onset of HIV-1 resistance. When implemented with a patient-centered approach, it can be a very useful tool for psychosocial support.

1. Introduction

As highly active antiretroviral treatment (HAART) becomes increasingly available in resource-limited settings,[1] the

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emergence of HIV-1 resistance is becoming a significant challenge.[2,3] Ensuring treatment adherence is essential, and HIV-1 viral load (VL) testing has been recommended to highlight poor adherence.[4]

WHO guidelines recommend VL monitoring primarily to guide decisions to switch regimens.[5] Its additional use to reinforce adherence has been documented in South Africa[6,7] and other resource-limited settings.[8] If VL is to be used optimally to reinforce adherence, however, some issues need to be resolved regarding patients' understanding and involvement. How should they be prepared to take the test? How do they interpret the results? To our knowledge there has been no literature discussing these aspects.

In this article we describe our experience in introducing VL monitoring in a resource-limited setting in Thailand, and the tools we developed, focusing on treatment literacy and patient involvement.

2. Project description

2.1. Setting

Kuchinarai (population 103 000) is a typical rural district in northeastern Thailand. The population are mostly subsistence rice farm laborers. Antenatal HIV prevalence in 2006 was 2.6%, compared with a national rate of 1.0%. First-line HAART has been available since February 2002. Adherence is monitored by pill count and self-report, methods that tend to overestimate adherence.[9] In August 2006, following new Ministry of Public Health guidelines, VL testing and second-line HAART were introduced.

2.2. HIV-1 VL monitoring

We offered VL counseling and testing to adults and children taking HAART for a minimum of 6 months (see below). HIV-1 RNA assays were performed in the reference laboratory of the Thai Red Cross HIV Clinical Research Centre using a b-DNA method with a lower limit of detection of <50 copies/ml. If VL was >1000 copies/ml, genotype resistance testing was performed.

We divided patients into three categories depending on the result. Those with undetectable VL proceeded to 6 monthly monitoring thereafter. Those with low detectable VL (>50 to <1000 copies/ml) were offered additional adherence support and follow-up VL after 3 months: intuitively a reasonable time for solving adherence problems. Patients with a high detectable VL (>1000 copies/ml) and confirmed HIV-1 resistance were offered appropriate counseling together with second-line treatment. If genotype testing failed to show resistant mutations, they continued first-line treatment and had follow-up VL at 3 months. We recorded results of routine clinical follow-up in standardized software (FUCHIA).[10]

2.3. Developing education materials and a pre- and post-VL testing protocol

Our strategy was to use VL testing as an opportunity to help patients reflect on their commitment to treatment, their adherence and other behavior that possibly leads to resistance, and to make their own decisions on how to change. We developed educational materials and a counseling pro-

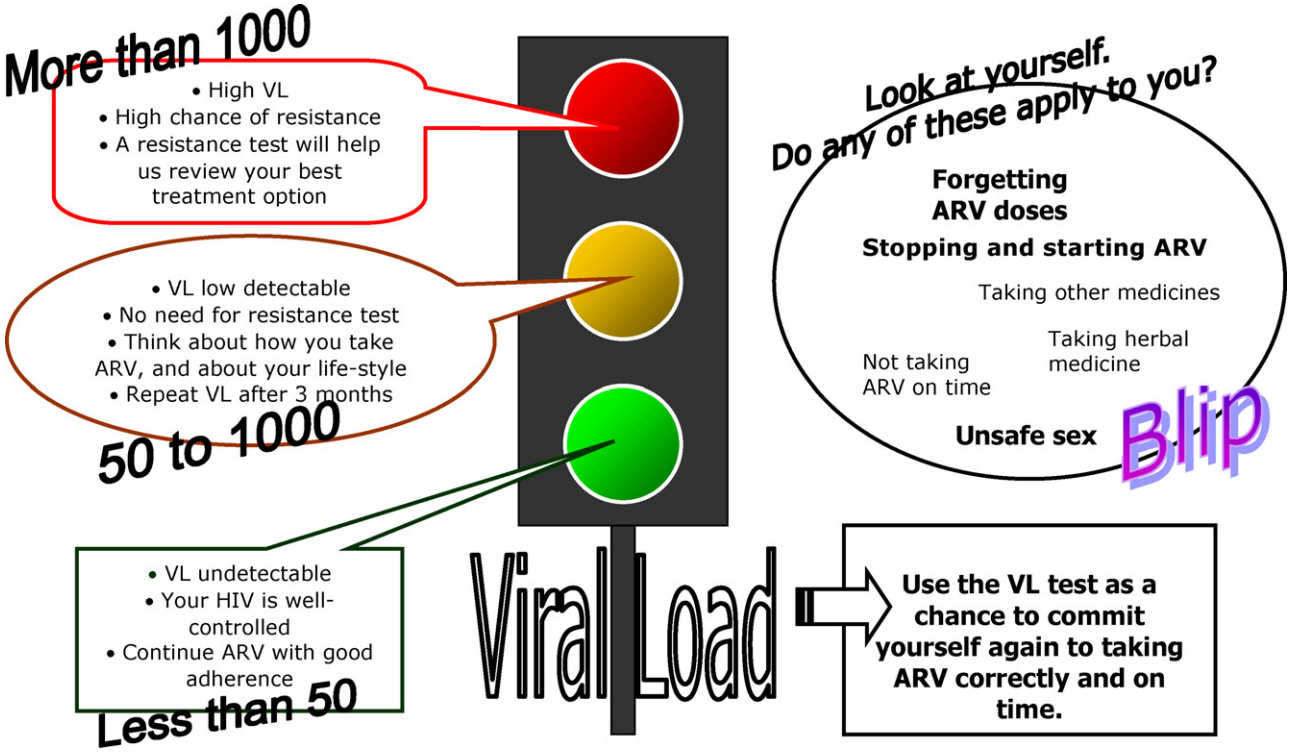

Figure 1 'Traffic lights' poster used to guide patients through the process of HIV-1 viral load testing. ARV: antiretrovirals.