

12 Months Retention in Care and Viral Suppression amongst HIV Infected Women (HIVIW) on Option B+ in Yaoundé

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Abstract

Background: Retention in care of HIVIW after delivery remains a key challenge in routine life settings; in addition, few studies have reported on post partum viral suppression of HIVIW at the era of test and treat.

Objective: Our objective was to assess the retention in care at 12-months postpartum and viral suppression amongst HIVIW on option B+ at Essos Hospital Centre.

Method: We conducted a cross sectional analytic study over a 6 month-period from January to June 2019. HIVIW on option B+, having delivered at least 12 months prior to the onset of the study were included and surveyed using a semi-structured questionnaire. Primary end-points were 1/ 12-month retention 2/ adherence to follow-up defined by at least one quarterly postpartum visit and 3/ viral suppression defined by a viral load <40 copies/ml at the last control. Factors associated with adherence to follow-up (FU) and viral suppression were assessed in uni and multivariate analysis using Software R version 3.6; with $p < 0.05$ considered statistically significant.

Results: We included 106 women with a median age of 35 years [IQR= 31-38]. Almost 2 of 3 (67,92%) were living as a couple, with a serodiscordant HIV negative partner for half of them (54%). Most of the women (57,55%) had reached the secondary level of education while 44,34% were working in the informal sector and 41,55% had no regular income. Rates of retention, adherence to follow-up and viral suppression were respectfully measured at 65%, 82.08% and 93.55%. A post-partum viral load measurement was mostly due to non-adherence to FU ($p=0.00$). In multivariate analysis, monthly income ($p=0.04$) and lack of viral load measure ($p=0.0033$) influenced retention in follow-up.

Conclusion: Most HIVIW in retention and adherent to 12-month post-partum follow-up had an undetectable viral load in this setting. Monthly income and missing measurements of viral load were associated with low adherence to follow-up.

1. INTRODUCTION

The HIV pandemic continues to affect the world globally as a matter of public health with almost 37.9 million people living with HIV in 2018, and significant decline of AIDS-related deaths [1, 2]. Regional disparities contribute to making Africa one of the hotspots of the pandemic worldwide with more than 25.6 million people infected, mostly female. In Cameroon, the prevalence rate amongst women was higher, with a twofold (5,6 %) difference amongst women than men of adult age (2,9 %) in the

early 2010s [3]. Option B+ was introduced nationwide in 2012 in order to accelerate the elimination of transmission of HIV from mother-to-child and keep them alive [4].

Thus antiretroviral therapy is started as early as possible during or prior to pregnancy irrespective of clinical, immunological and/or viral status and aims at being continued for life [4]. Despite evidence of success of this strategy in reducing MTCT of HIV documented in Yaoundé [5], many worries have been raised about the difficulties of follow up of HIV

positive women after delivery. Some among them claim that they just wanted a child and didn't feel sick [6]. This attitude has resulted in critical shortages in follow-up after delivery and even in treatment interruption during lactation with harmful consequences for both mother and child [7, 8]. The operational response to these post-partum bottlenecks have included, among others, the involvement of partners, use of different mobile technologies, mentorship using mothers and expert patients, and the implementation of adherence counseling groups for mothers started on ARVs during or after pregnancy [8, 9]. In Yaoundé, some of these strategies have been documented earlier especially regarding breastfeeding support groups, notably prior the B+ period [10]. In this context, while attempting to develop a more comprehensive response to the retention in care of positive pregnant women in the era of B+ and universal antiretroviral treatment, we designed this study in order to assess 1/ the 12-month retention rate, 2/ factors influencing adherence to follow-up and 3/ viral suppression among mothers retained in care

2. METHOD

2.1. Study Setting

This was a cross sectional analytic study targeting HIV infected women 12 months after delivery, and followed up at Essos Hospital Centre(EHC).EHC is a referral PMTCT center operating since the early 2000s, in Yaoundé; the characteristics of this centre were extensively described elsewhere [10]. HIV infected pregnant women on Option B+ were enrolled from January to December 2017. Files of HIV positive women identified, with a delivery date between January to December 2017 were extracted from the maternity registry and merged with the National code of HIV patients' unique identifier at this HIV treatment center. All patients meeting the inclusion criteria were contacted by phone for a short interview to explain the study, register consent and apply a short questionnaire for data collection. The

following data were collected: socio-demographic, clinical, obstetrical and particularly post-natal follow up after delivery; number of post-natal quarterly visits, measurement of viral load post-partum. Retention was measured using both registers of antenatal consultation and PMTCT. Adherence to follow up was evaluated quarterly by the community worker in charge of patient follow up and by the dispenser of ARVs at the pharmacy.

2.2. Statistical Analysis

Data entry was done using CsPro software, version 7.2. All statistical analyses were performed with R software, version 3.6.0. The Chi-square test was used for the independence test, the Fisher exact test was used alternately when the assumptions for the Chi-square test were not satisfied. The logistic regression model was used to estimate the Odds Ratio (OR) and their 95% confidence intervals.

3. RESULTS

In total among 200 pregnant women in 2017, 130 were kept in follow-up at 12 months post-partum giving a retention rate of 65%. However, due do missing data among those 130, only 106 were finally included for in-depth study of associated factors of adherence during the 12 months of post-partum. Figure one provides an overview of the flow chart of patient enrolment.

3.1. Sociodemographic and Characteristics of the Population

The median age of women included stood at 35 years, interquartile range [31-38]. Mothers were mostly living as a couple (67.92%), 57.55% of them had a secondary level of education. It's to be noted that the majority were working in the informal sector (44.34%) or had no regular income. Partners were seroconcordant positive in 34.3% (table 1). In addition, all those women were classified in WHO clinical stage 1 or 2, given Cotrimoxazole and received the standard first line recommended ART for pregnant women, free of protease inhibitors.

Table1. Sociodemographic characteristic of women on Option B+ at !2 months post-partum

	Number	Frequency(%)
Matrimonial status		
- Single	8	7.55
- Married	26	24.53
- In couple	72	67.92
Education		
- Primary	21	19.81
- Secondary	61	57.55
- Higher education	24	22.64

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Employment		
- White collar	7	6.6
- Worker in private	4	3.77
- Jobless	35	33.02
- Student	6	5.66
- home worker	7	6.6
- Informal sector	47	44.34
Income		
- Below minimal	23	21.70
- Above minimal	39	36.79
- No income	44	41.51
HIV status of the partner		
- Seropositive	35	34.31
- Seronegative	55	53.92
- Unknown	12	11.76
Age		
- 25-30	23	21.7
- 30-35	32	30.19
- 35-40	39	36.79
- 40-45	12	11.32

3.2. Viral Load Measurement and Undetectability at 12 Months Post Partum

In this population, the provision of ART monthly or quarterly was not different among the women adherent and those non adherent. Similarly the rate of women with undetectable viral load was comparable among those 2 groups. However the proportion of women having done a viral load measurement at 12 months post-partum was better in those adherent to follow up than their counterparts Among the 106 post-partum women, 85/106(80%) did a

Table2. Distribution of women on Option B+ at 12 months post partum according adherence to quarterly follow up and viral suppression

Variable	Adherent Quarterly FU (N=87, 82,08%)	Non Adherent to quarterly FU (N=19, 17, 92%)	p-value
Viral load measurement at 12 months post partum			0
Yes	59(93,65)	4(6,35)	
No	28(65,12)	15(34,88)	
Undetectable viral load (N=63)			0,79
Yes	58(93,55)	4(6,45)	
No	1(100)	0(0)	

3.3. Factors Associated with Quarterly Follow-Up at 12 Months Post-Partum.

Inthis population, in adjusted analysis, women with consistent quarterly follow-up were more

Table3. Factors associated to adherence to follow up at 12 months post partum: unadjusted and adjusted analysis

	OR(95%CI) unadjusted	p.value	OR (95%CI) adjusted	p.value
Income				
Lower than minimum	Ref		Ref	
Above minimum	0.36 (0.07-1.71)	0.19	0.18 (0.02-1.49)	0.11
No income	0.23 (0.05-1.07)	0.06	0.11 (0.01-0.87)	0.04
Viral load measurement at 12 months post partum				
Yes	Ref		Ref	
No	0.15 (0.05-0.44)	0.0007	0.17 (0.05-0.55)	0.0033

viral load measurement during pregnancy and 84/85 (98%) were undetectable. At 12 months post-partum, The viral load measurement was recorded for 63/106 (59%) had a viral measurement and 62/63 (98%) were undetectable, Viral load measurement was more frequent in those adherent to follow-up (93.65%) vs 6.35% (p=0.0) however no difference in viral suppression was found based on the frequency of post-partum follow up. (See Table 2)

likely to have done a viral load measurement at 12 months post-partum (P=0.0030); in addition, lack of income negatively affected adherence to follow-up (p=0.040) see Table 3.

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Support group				
Yes	Ref		Ref	
No	0.45 (0.1-1.20)	0.11	0.49 (0.16-1.53)	0.22
Viral measurement during pregnancy				
Yes	Réf.		Réf.	
No	0.68 (0.25-1.84)	0.44	0.58 (0.18-1.89)	0.37
HIV status of the partner				
Positive	Réf.		Réf.	
Négative	1.07 (0.37-3.10)	0.89	0.70(0.20-2.40)	0.57
Unknown	0.67 (0.16-2.83)	0.58	0.57 (0.12-2.76)	0.48

OR: odds ratio ; CI: Confidence Interval

4. DISCUSSION

The main findings of this study are a retention rate of 65% at 12 months post-partum, full compliance to quarterly follow up of 80% and a viral suppression above 90% among those retained; however, it should be noted that the coverage of viral load measurement was far from meeting the third 90s target either during pregnancy or after delivery.

Besides these shortages, our first comment acknowledges that our lost to follow-up of 35% at 12 months was quite lower than the 53.7% recorded in GOMBA [11], though parallel to data of 14 months retention post-delivery in Uganda [12]. In addition, our rate of retention stands within the interval recorded in various settings of sub-Saharan Africa [13]. Overall, the retention rate of 65% in this setting shifts between the 76% recorded in Douala and the 64% recorded in Kumbain the same country [14, 15]. Besides retention, adherence to follow-up in this setting was quite promising; of note a laudable rate of 82% of women were compliant to quarterly follow-up compared to data reported by Mellinset al in similar settings [16]. We can assume that the older age (median age of 35 years) of our mothers may have motivated them to be more respectful of the various appointments at the clinic. In fact, the influence of maternal age on adherence to post-natal visits was earlier outlined by other teams assuming a longer past story of PMTCT [14, 17]. However, in our setting an association between age and adherence was not formally identified. Regarding viral suppression, we can appreciate the high rate of viral suppression but this should not lead us to ignore the middle coverage of viral load measurement at 12 months post-partum as mentioned above. Regardless of this weakness, our rate of 93.5% of viral suppression is reassuring and above the 77% rate posted from Uganda within the same timeframe [18]. In addition, our suppression rate is comparable to

the one observed in the Pure study under research-related conditions. On the contrary, data from the field shows a very low rate of viral load testing both during pregnancy and after in Zimbabwe, making our achievement appreciable [19, 20]. In this setting, women likely to have completed post-partum follow up had a regular monthly income and post-natal measurement of viral load. Our findings therefore corroborate reports of Hoffmann where cost and time to go to health facilities negatively affected adherence to post-natal routine care [17]. On the other hand, lack of a viral load which can be attributed to both financial causes and or denial attitudes, was correlated with lower adherence to FU. These latest findings are concordant with allissues raised beyond B+; with the need to increase the rate of fully engagement to antiretroviral treatment and services among women retained in care after delivery and for lifelong time [21].

5. CONCLUSION

In this setting, the retention rate stood at 65% but conversely compliance to follow-up was high including viral suppression at 12 months post-partum. These laudable results should be strengthened while increasing the rate of retention for all mothers.

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