

Sustained viral suppression in a cohort of in-care, HIV-positive patients in Virginia: The Medical Monitoring Project (MMP), 2009-2013

Introduction

- Viral suppression of HIV can contribute to improved health outcomes among persons living with HIV (PLWH).^{1,2}
- Sustained viral suppression (SVS; viral suppression for a minimum of two years) can increase the likelihood of potential improved health outcomes.
- Thus, it is important to monitor and assess duration of SVS at the individual and population levels.
- Few studies have explored patient characteristics that may be associated with SVS for PLWH at the state level.

Purpose

The aim of this analysis was to determine sociodemographic characteristics associated with SVS for PLWH receiving medical care in Virginia.

MMP Overview and Methodology

- MMP is an ongoing, supplemental surveillance system that assesses clinical and behavioral characteristics of HIV-infected adults receiving care in the United States.
- As a cross-sectional, complex survey design³, MMP uses a three-stage sampling model to select patients as potential participants.
- Structured interviews and medical record abstractions (MRAs) are conducted for each participant that agrees to participate.
- Raw data are weighted so that descriptive and statistical analyses can be generalized to the entire in-care, HIV-positive population.⁴

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Corresponding Author

Jennifer Kienzle, VDH, 109 Governor St, Richmond, Virginia, 23218, USA, Jennifer.Kienzle@vdh.virginia.gov.

Analysis Methods

- Virginia MMP patients from 2009-2013 were included in the analysis.
- Patient characteristics and historical laboratory data were derived from MMP data.
- Laboratory data post-MMP participation (≥ 1 year) were collected from eHARS, the state HIV surveillance data system for Virginia.
- The outcome variable for the multivariate logistic regression model was SVS for a minimum of 2 years.
- Binary logistic regression was performed for each predictor for selection into the multivariate regression model (where $p < .10$).

Demographics and Predictor Variables (N= 923)

Variable	n ^a	% ^b	Variable is included in final model
Gender			No
Male	590	65.1	
Female	317	33.2	
Transgender	16	1.7	
Race			Yes
Black	585	61.9	
White	206	23.5	
Hispanic or Other	132	14.6	
Age (years)			No
18-29	82	10.0	
30-39	140	16.0	
40-49	313	34.5	
50+	388	39.4	
Years since HIV-positive diagnosis			Yes
< 5 years	240	26.8	
≥ 5 years	683	73.2	
Homelessness in the past 12 months?			Yes
Yes	81	8.5	
No	842	91.5	
Living above the FPL**?			Yes
Yes	499	54.9	
No	366	39.4	
Daily cigarette smoker?			Yes
Yes	339	36.0	
No	584	64.0	

^aProportions may not add up to 100% due to rounding and/or missing responses
^b Unweighted frequency; ^c Weighted proportion
** Federal poverty level; assessed for the year the patient participated

SVS Differed by Race and Cigarette Smoking Status

Variable*	Adjusted Odds Ratio (95% CI)	p
Race (reference = Black)		
White	1.8 (1.2, 2.6)	<0.01
Hispanic/Other	1.2 (0.8, 1.8)	0.31
Years since HIV diagnosis (reference = < 5 years)	0.7 (0.4, 1.0)	0.06
Homelessness (reference = No)	1.5 (0.9, 2.5)	0.16
Living above FPL (reference = No)	1.0 (0.8, 1.4)	0.81
Daily smoker (reference = No)	1.6 (1.1, 2.2)	<0.01

Discussion

- Race may influence SVS for in-care, HIV-positive patients in Virginia.
- In addition, individuals reporting daily cigarette smoking were less likely to have SVS.
- Exploring the influence of race and/or smoking cessation may help tailor ART adherence conversations, which can in turn increase the likelihood of SVS.
- Due to statistical weighting of data, these findings can be generalized to the entire in-care, HIV-positive population in Virginia.
- Data limitations include that predictor variables are self-report items. Responses to these types of items may carry bias (recall bias, experimenter bias, etc).

References

- 1 Gulick, R.M. (2010). Antiretroviral Treatment 2012: Progress and Controversies. *Journal of Acquired Immune Deficiency Syndrome*, 55(Suppl. 1), S43-S48.
- 2 Simpson, S.H., Eurich, D.T., Majumdar, S.R., et al. (2006). A meta-analysis of the association between adherence to drug therapy and mortality. *BMJ*, 333(7557), 15.
- 3 Frankel, M., McNaghten, A., Shapiro, M., et al. (2012). A Probability Sample for Monitoring the HIV-infected Population in Care in the U.S. and in Selected States. *Open AIDS Journal*, Suppl 167-76.
- 4 Harding, R.L., Iachan, R., Johnson, C.H., et al. (2013) Weighting Methods for the 2010 Data Collection Cycle of the Medical Monitoring Project. *Joint Statistical Meeting Proceedings*.