

Adherence and HIV Suppression after Behavioral Intervention in Patients with Elevated Viral Load

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**Grant: Multi-Site Collaborative Study for
Adherence, Virologic and Clinical
Outcome at 14 Sites: MACH 14**
– Aggregate data from 2860 people in
16 studies at 14 sites in 12 states
used MEMS to examine HIV
medication adherence

DESCRIPTIVE INFORMATION

- **Studies conducted between 1997 and 2009**
- **Mean length of patient follow-up was 18 months (range: 3-60 mos.)**
- **Sample size for each study ranged from 76-404 participants.**

BACKGROUND

Prior to MACH-14 we found no differences in HIV VL between gay men randomized to MAT Alone vs. MAT + CBSM over 15 months

For men with detectable HIV VL (≥ 50 copies/mL), MAT+CBSM decreased VL more than MAT alone over 15 months (decrease was $0.56 \log_{10}$ units; $p < .05$)

[Antoni et al., 2006, *Psychosom. Med.*]

BACKGROUND

A meta-analytic review of adherence RCT indicated that participants in the intervention arm were nearly more likely than controls to achieve an undetectable VL (OR=1.25, 95% CI: 0.99-1.59)

(Simoni et al., 2006, JAIDS, Supp.)

METHODS for MACH-14 INTERVENTION ANALYSES

Using MACH-14 data we asked whether formal adherence to randomized controlled adherence training programs decreased HIV VL when examined across:

- Multiple intervention formats (e.g., CBSM, peer counseling, general counseling, motivational interviewing, buddy paging, telephone instruction)**
- Procedural differences (e.g., number of sessions, duration of treatment)**
- Various modes of HIV transmission**
- Diverse racial/ethnic backgrounds**
- Both sexes**

INTERVENTION STRATEGY

- **We examined data from 435 intervention study participants from 10 MACH-14 randomized controlled studies.**

INCLUSION CRITERIA

- **Participants enrolled in MACH-14 RCT**
- **VL ≥ 400 copies/mL when assessed < 3 months before intervention began**
- **VL assessment $> 3 < 6$ months after intervention began (closest data to 6 months)**

WHEN AVAILABLE

- VL assessment 6 – 9 months after intervention began (closest data to 9 months)

STATISTICS

- **Raw scores were used in analyses as conventional log transformations are inappropriate for modeling changes over time**
- **We used PROC MIXED in SAS to compare the intervention and control groups for the changes in VL from baseline to 3 months to 6 months**
- **PROC MIXED uses full information maximum likelihood (FIML) to estimate parameters in the presence of missing data.**

DEMOGRAPHICS

<u>Gender</u>	<u>Intervention</u>	<u>Control</u>
Women	68	51
Men	192	124
TOTAL (N=435)	260	175
<u>Race/Ethnicity</u>		
Black	110	88
Non-Hispanic White	99	56
Hispanic/Latino	26	16
Asian or Other	25	14
<u>Education</u>		
< High School	60	35
High School	168	122
> High School	32	18

VIRAL LOAD (Log 10 Viral Load)

	Intervention	Control
Baseline	4.34 (0.95)	4.36 (1.06)
3-6 months	2.37 (1.61)	2.65 (1.42)
6-9 months	2.75 (1.92)	2.71 (1.87)

PROC MIXED on 2 Groups and 3 Time points

Viral Load

Visit: $F(2,421) = 12.79$, $p < .0001$

Visits X Groups: $F(2,421) = 2.29$, $p = .10$

MEMS and Self-Reported Adherence

	<u>Intervention</u>	<u>Control</u>
MEMS Adherence (7 days)		
3-6 months	P<.03	0.60 (0.39)
6-9 months		0.58 (0.39)

SUMMARY OF FINDINGS

- Repeated measures analysis of variance confirmed that VL decreased significantly across time
- Repeated measures analysis of variance failed to confirm a visit x treatment interaction although there may be some evidence suggesting a positive trend
- Repeated measures analysis of variance suggests a significant decrease in adherence across time using MEMS but not self-report

CONCLUSIONS

- Among patients enrolled in MACH-14 intervention RCT who initially had VL \geq 400 copies/mL, medication initiation or change alone may explain the significant decrease in VL
- The behavioral adherence interventions as a group, however, did not lead either to significantly higher adherence measured by MEMS or Self-Report nor to differentially lower VL when compared to control conditions.
- When compared to MEMS, Self-Report clearly provided higher estimates of adherence.