Comparison of models of care to promote postpartum viral suppression in South African women

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Background

- Major concern of maintaining viral suppression (VS) in postpartum women on antiretroviral therapy (ART)
- Significant interest in both integrated models of service delivery for maternal and child health (MCH), and in differentiated service delivery models (DSD) postpartum
- Few rigorous data comparing intervention strategies

Methods

- Secondary analysis of individual patient trial data of postpartum women living with HIV (WLH) from Cape Town to compare head-to-head:

(i) Integrated MCH model with maternal and childcare co-located and co-scheduled for both mother and infant

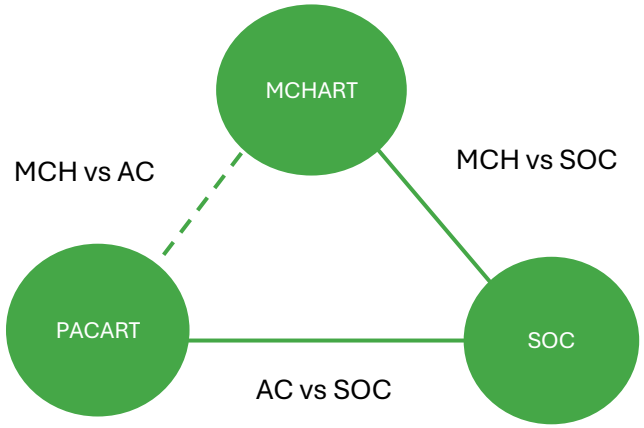
(i) DSD model with mothers referred to community-based "adherence clubs" for maternal ART dispensing separate to childcare

Methods

- Data sources from two RCTs:
  - MCH model: Maternal and Child Health Antiretroviral Therapy (**MCHART**) study; June 2013 – Dec 2014
  - Adherence club: Postpartum Adherence Clubs for Antiretroviral Therapy (**PACART**) study; Jan 2016 – Nov 2019
- Conducted in the same primary care community health centre
- Each intervention compared to the local standard of care (SOC)
- Inclusion criteria:
  - MCHART: initiating ART during pregnancy (regardless of VL)
  - PACART: VL <400 copies/ml within the last 3 months
- Demographic and behavioural covariates collected using the same tools

Methods

- Viral load testing conducted separate to routine antenatal ART
- ART regimen: tenofovir+lamivudine+efavirenz
- **Analysis:** frequentist network methods via generalized linear mixed models



- Compare VS (<50 copies/ml) under each model of care at 6m and 12m postpartum with SOC as the reference

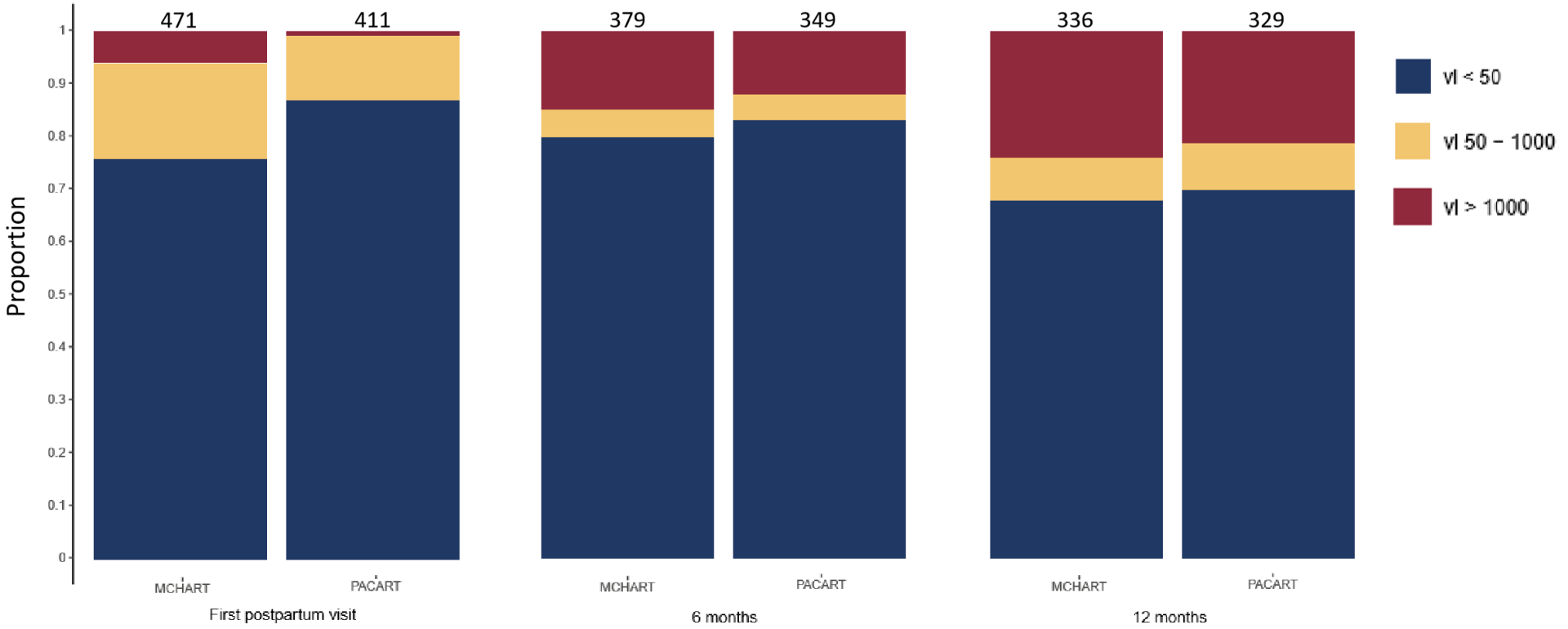
Results

- A total of 882 women enrolled
  - PACART: 206 AC ; 205 control
  - MCHART: MCH 233 ; 238 control
- Median time postpartum at enrolment: 1 week
- Baseline characteristics similar across the intervention and control groups

Characteristic	PACART (n= 411)	Phase III MCHART (n = 471)
Mean age (SD), years	29(5)	28(5)
Age groups		
18-25 years	84(20%)	137(29%)
25-30 years	155(38%)	154(33%)
30-35 years	121(29%)	124(26%)
> 35 years	50(12%)	56(12%)
Missing age	1(0%)	0(0%)
IsiXhosa	386(94%)	456(97%)
Nulliparous	103(25%)	87(18%)
Completed Secondary/any Tertiary Education	130(32%)	117(25%)
Currently Employed	123(30%)	184(39%)
Married/Cohabiting	173(42%)	193(41%)
Newly diagnosed HIV+ in this pregnancy	249(61%)	268(57%)
Previous ART	50(12%)	19(4%)
Previous TB	27(7%)	52(11%)
Delivery		
In Primary care	157(38%)	186(39%)
Hospital care	253(62%)	271(58%)
Born out of facility	1(0%)	14(3%)
Median duration on ART [IQR], weeks	23[18,29]	18[12,23]
Missed ART dose reported in previous 30 days	84(20%)	64(14%)
Median days postpartum [IQR]	10[6,21]	5[4,7]

AC: Adherence Club; MCH: maternal-and-child Health; ART: antiretroviral therapy SD: standard deviation; IQR: interquartile range

Results



- Follow-up through 12m: 75% (665/882)
  - MCHART: 71% (336/471)
  - PACART: 80% (329/411)

Results

- VS between MCHART and PACART (interventions)
  - 6m: 88% vs 87%
  - 12m: 80% vs 74%
- VS between MCHART and PACART (SOC)
  - 6m: 79% vs 71%
  - 12m: 67% vs 55%

Results

- Network analysis for viral suppression

Model	Treatment	6 months (n = 720)	12 months (n = 657)
		OR (95% CI)	OR (95% CI)
Unadjusted	MCH vs SOC (direct)	3.27* (1.90 – 5.62)	3.30* (2.03 – 5.35)
	AC vs SOC (direct)	1.73* (1.00 – 3.01)	1.43 (0.89 – 2.29)
	MCH vs AC (indirect)	1.90 (0.88 – 4.07)	2.31 (1.18 – 4.55)
Adjusted**	MCH vs SOC (direct)	3.17* (1.85 – 5.45)	3.33* (2.02 – 5.49)
	AC vs SOC (direct)	1.83* (1.01 – 3.31)	1.33 (0.81 – 2.19)
	MCH vs AC (indirect)	1.73 (0.78 – 3.84)	2.48* (1.25 – 4.95)

Conclusion

- Integration of ART and postpartum MCH services achieved higher levels of VS compared to referral of mothers to DSD models of care in this setting
- Findings are reflective of the efficacy of the models of care
- Other determinants of effectiveness should be incorporated in decision making

Thank You

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