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Gender differences in outcomes to first-line treatment in the era of modern antiretroviral therapy (ART)

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Aim

Previous studies of HIV care have reported disparities in outcomes for women. We have studied whether these differences persist in the modern ART era.

We used single centre cohort analysis to determine this.

Barber et al UK CHIC Study BMJ 2011; 343:d6016

Method

All previously ART-naïve individuals attending our clinic (Royal Free Hospital, London) starting on triple ART from 1st January 2006 onwards.

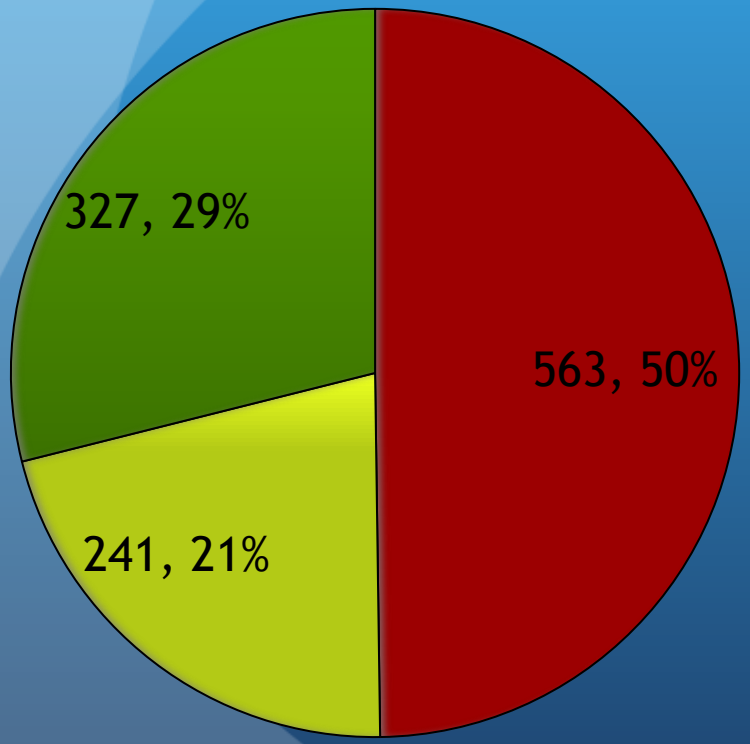
Patients were stratified into three groups: MSMs, non-MSM men and women

Time to:

- viral load suppression (<50 copies/ml)
- viral failure (2 consecutive VLs >200 copies/ml more than 6 months after starting ART)
- treatment modification (any ART discontinuation/substitution)

were estimated using standard survival methods.

Previously ART naive patients starting triple ART from January 2006

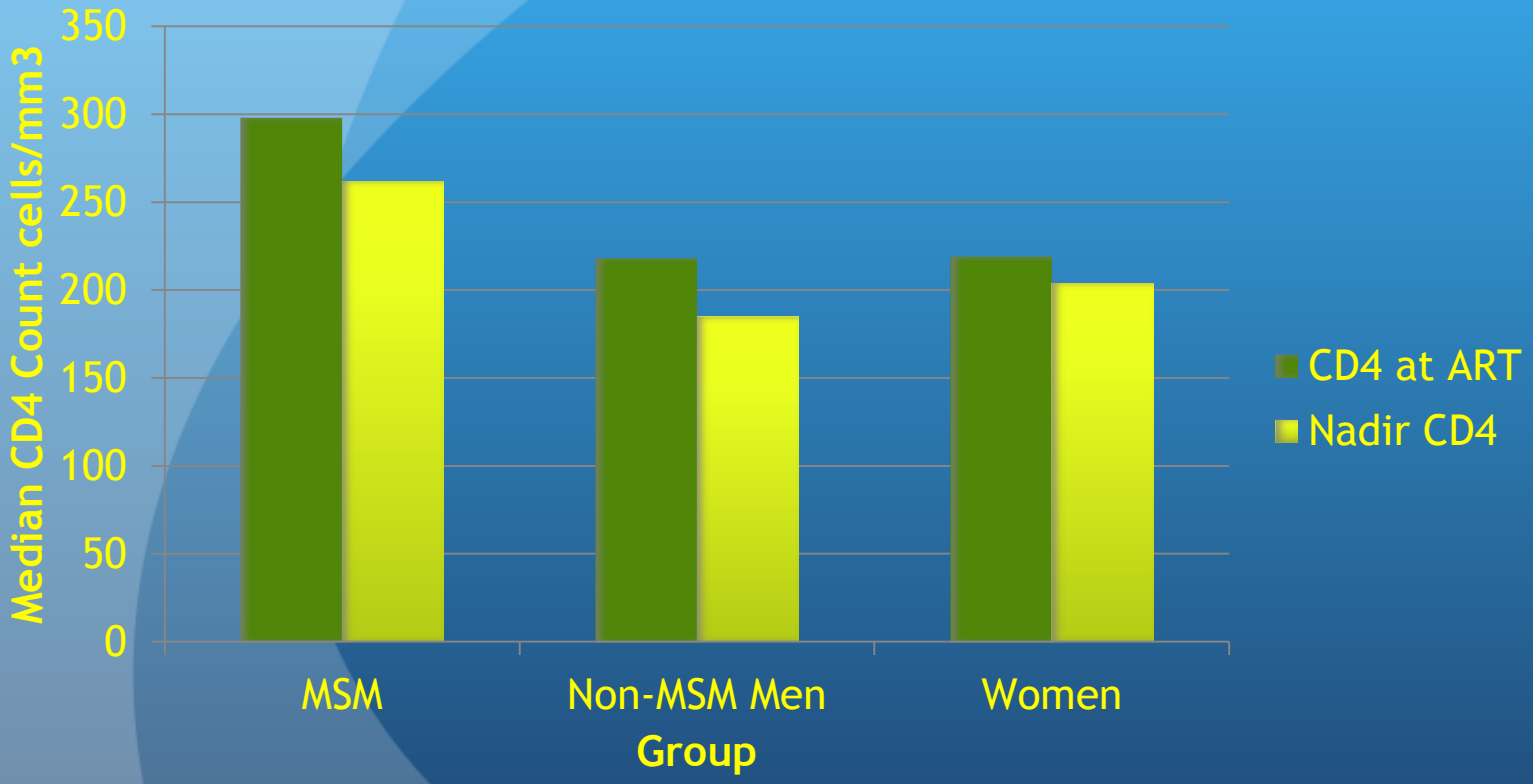


1131 Patients

- MSM
- Non MSM Men
- Women

		MSM	Non-MSM Men	Women
Pregnant when started ART	Yes	0	0	32 (10%)
Age at ART (years)	Median (IQR)	39 (33,44)	41 (35,49)	37 (32, 43)
Ethnicity	White Black African Other	459 (82%) 7 (1%) 97 (17%)	84 (35%) 105 (44%) 52 (21%)	56 (17%) 196 (60%) 75 (23%)
HIV Risk for acquisition	MSM IDU Heterosexual Other/Unknown	563 (100%) 0 0 0	0 19 (8%) 207 (86%) 15 (6%)	0 8 (2%) 316 (97%) 3 (1%)
Year started ART	Median	2008	2008	2008
Previous AIDS diagnosis	Yes	70 (12%)	72 (30%)	71 (22%)
Total follow up (years)	Median (IQR)	3.0 (1.7, 4.6)	2.8 (1.2, 4.2)	2.9 (1.3, 4.6)

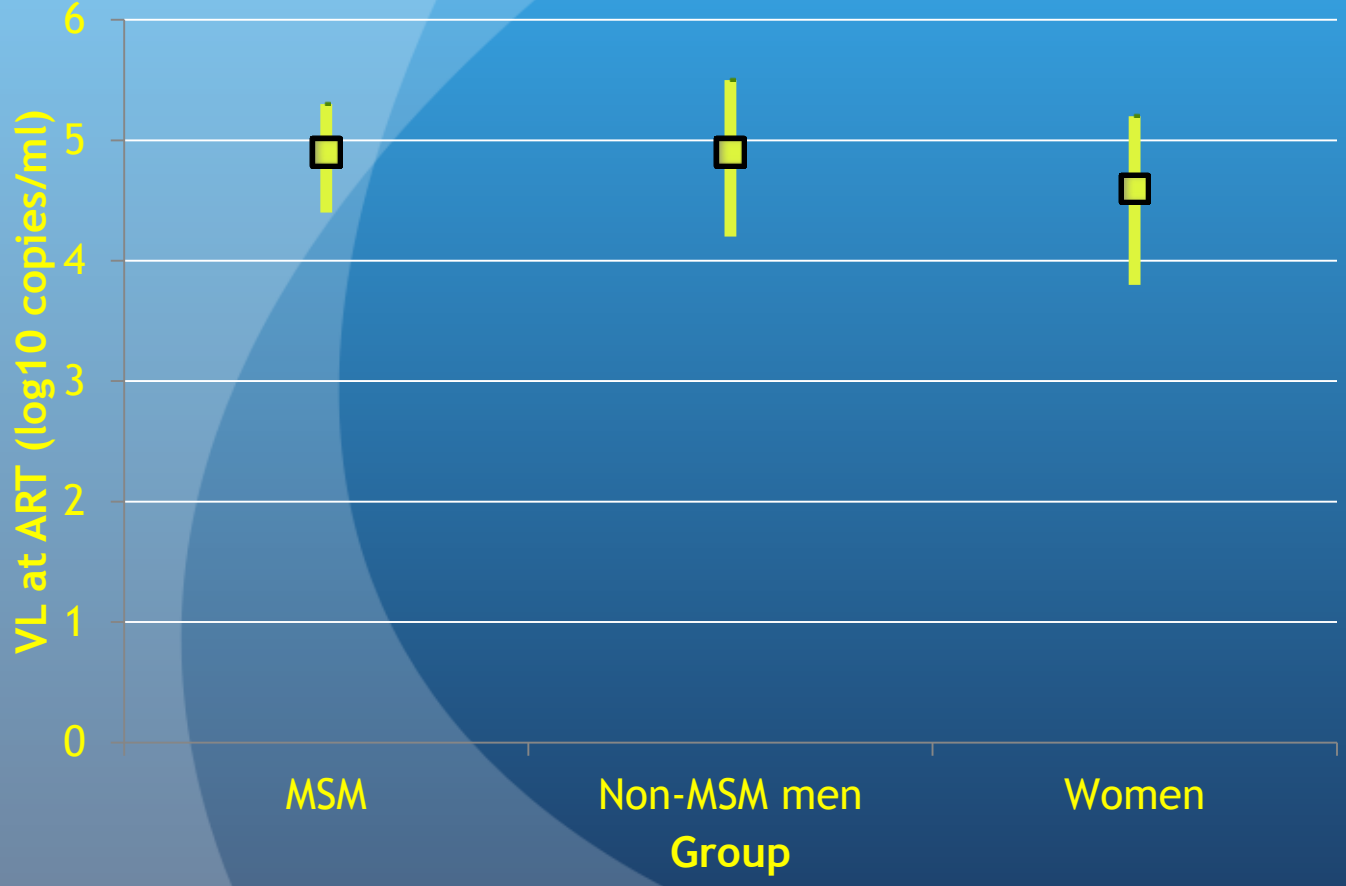
Average CD4 counts at start of therapy and nadir



Median time from diagnosis to ART (years)	**2.3 (0.2, 5.1)**	**0.3 (0.1, 2.9)**	**0.3 (0.1, 3.6)**

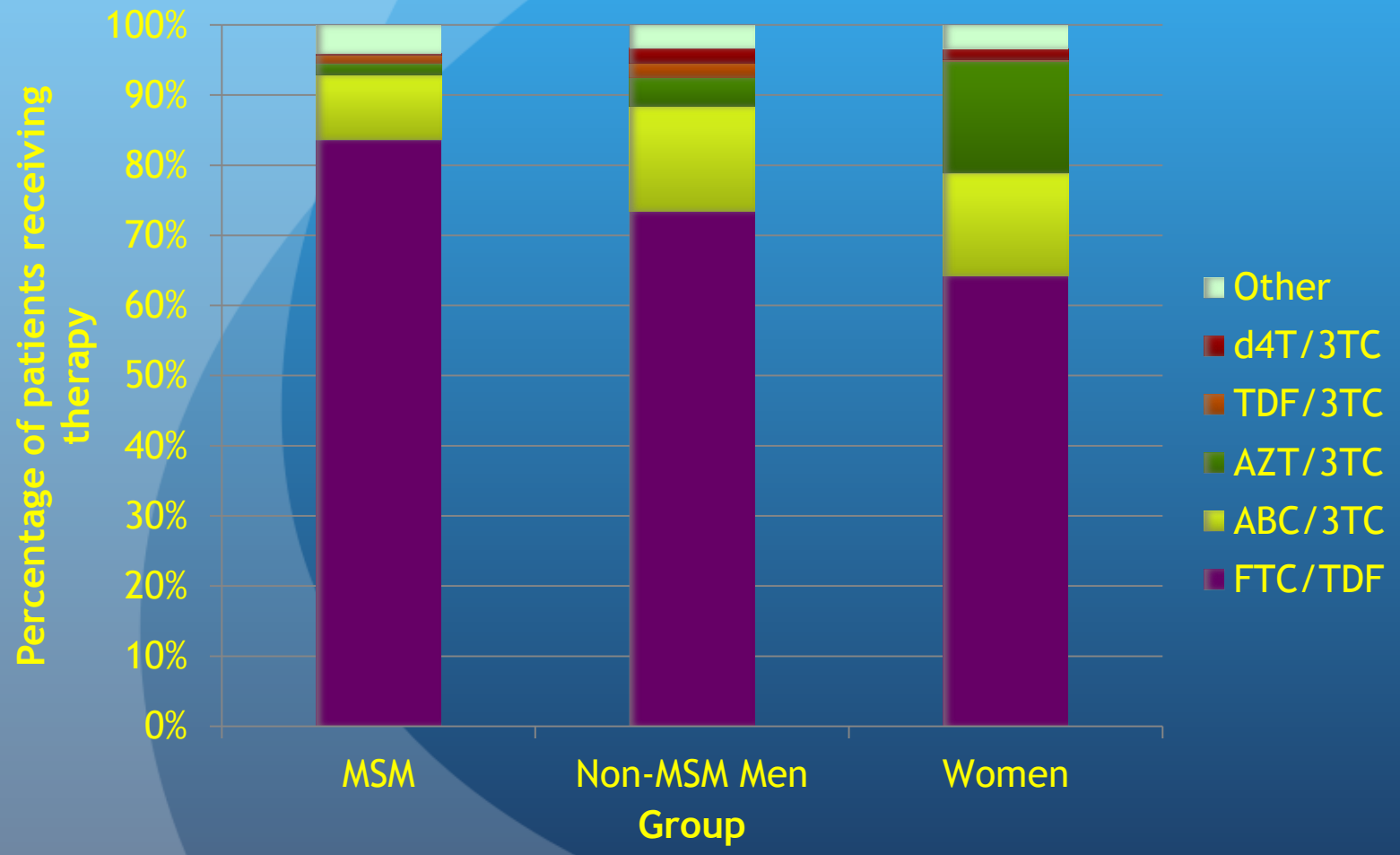
p=<0.0001

Viral loads at ART initiation



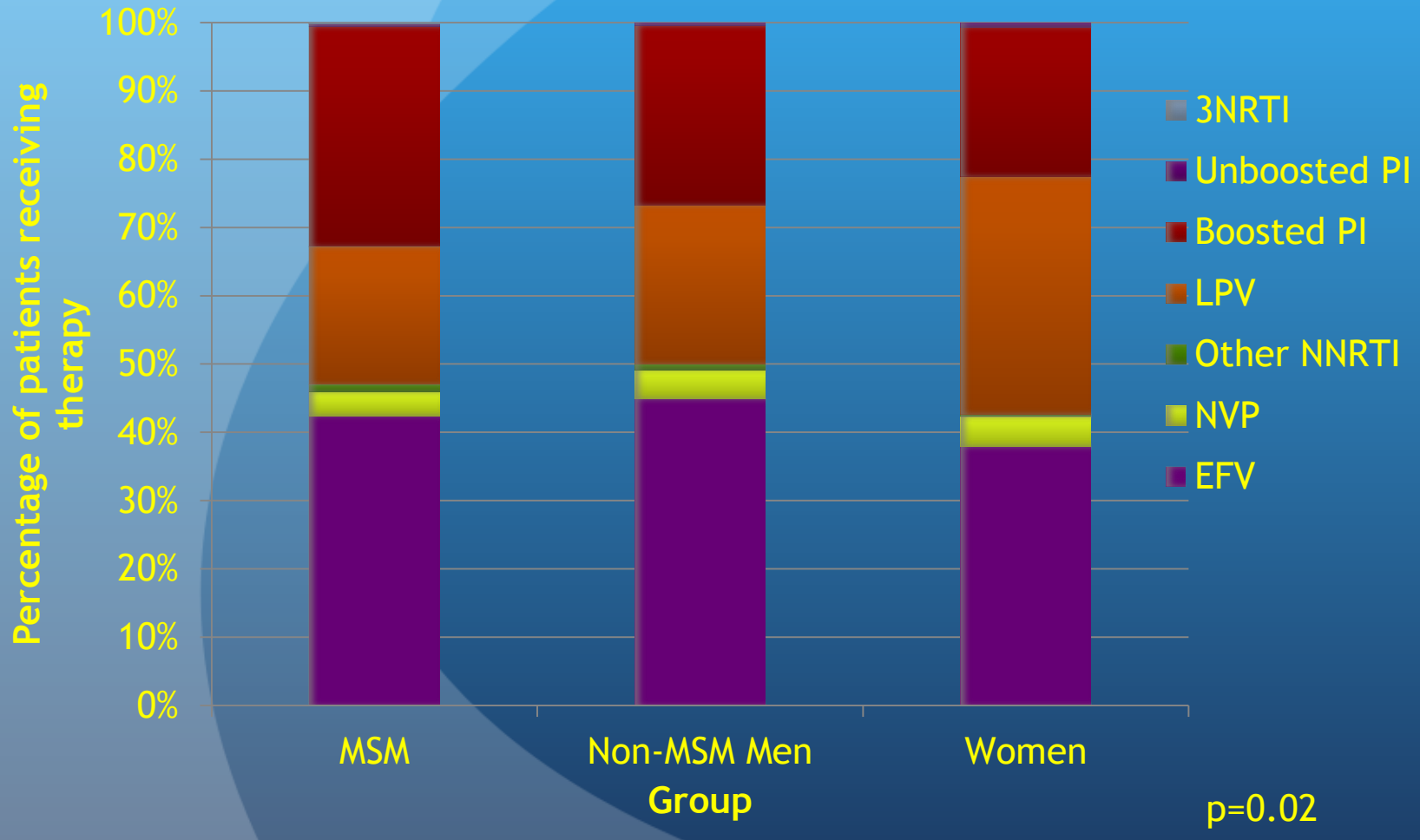
Median (IQR); p<0.0001

ART components – NRTI backbone

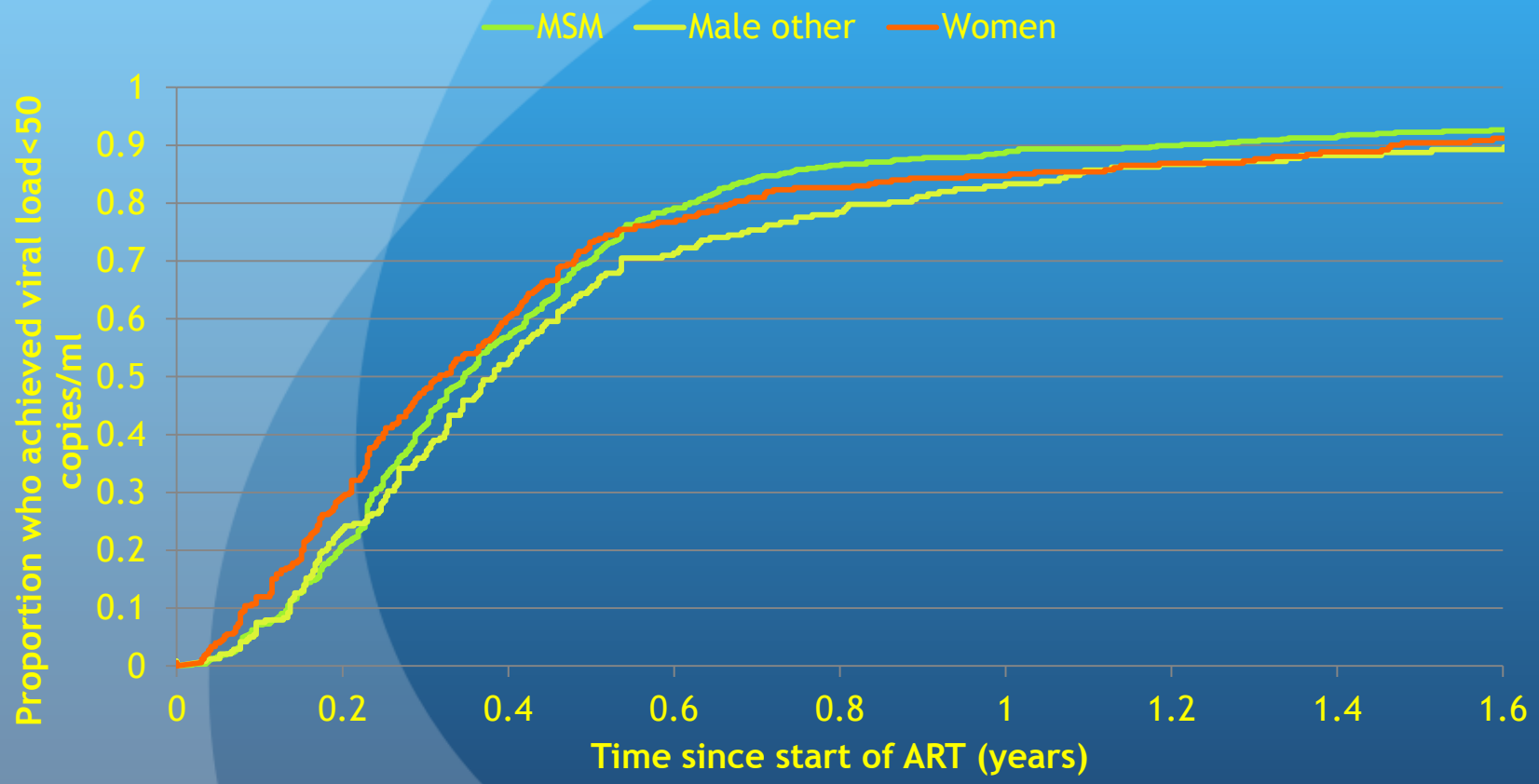


p<0.0001

ART components – PI/NNRTI/II



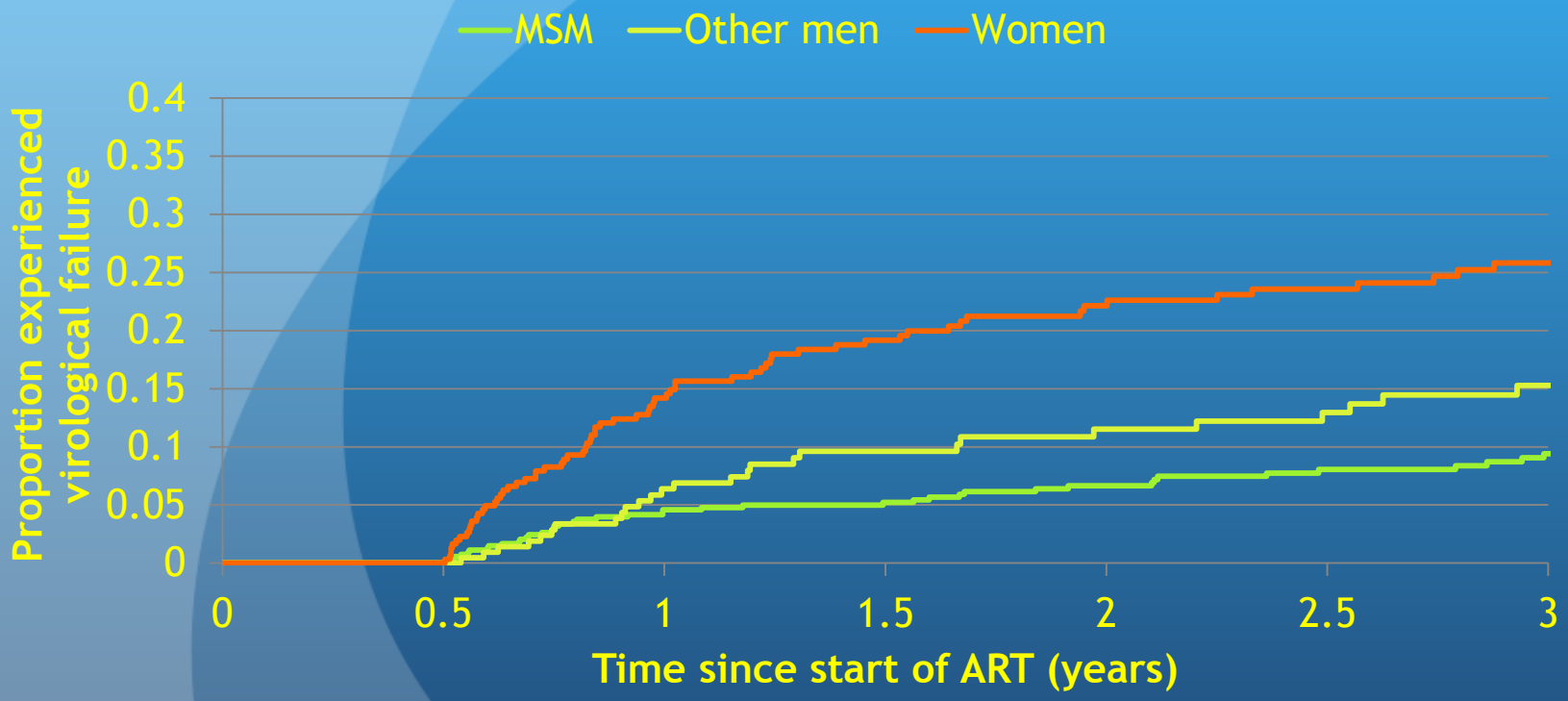
Viral load suppression <50cps/ml



By 1 year: MSM: 88.8% Other men: 83.4% Women: 84.7%

p value 0.19

Virological failure (2 VLs >200cps/ml >6/12 after ART start)

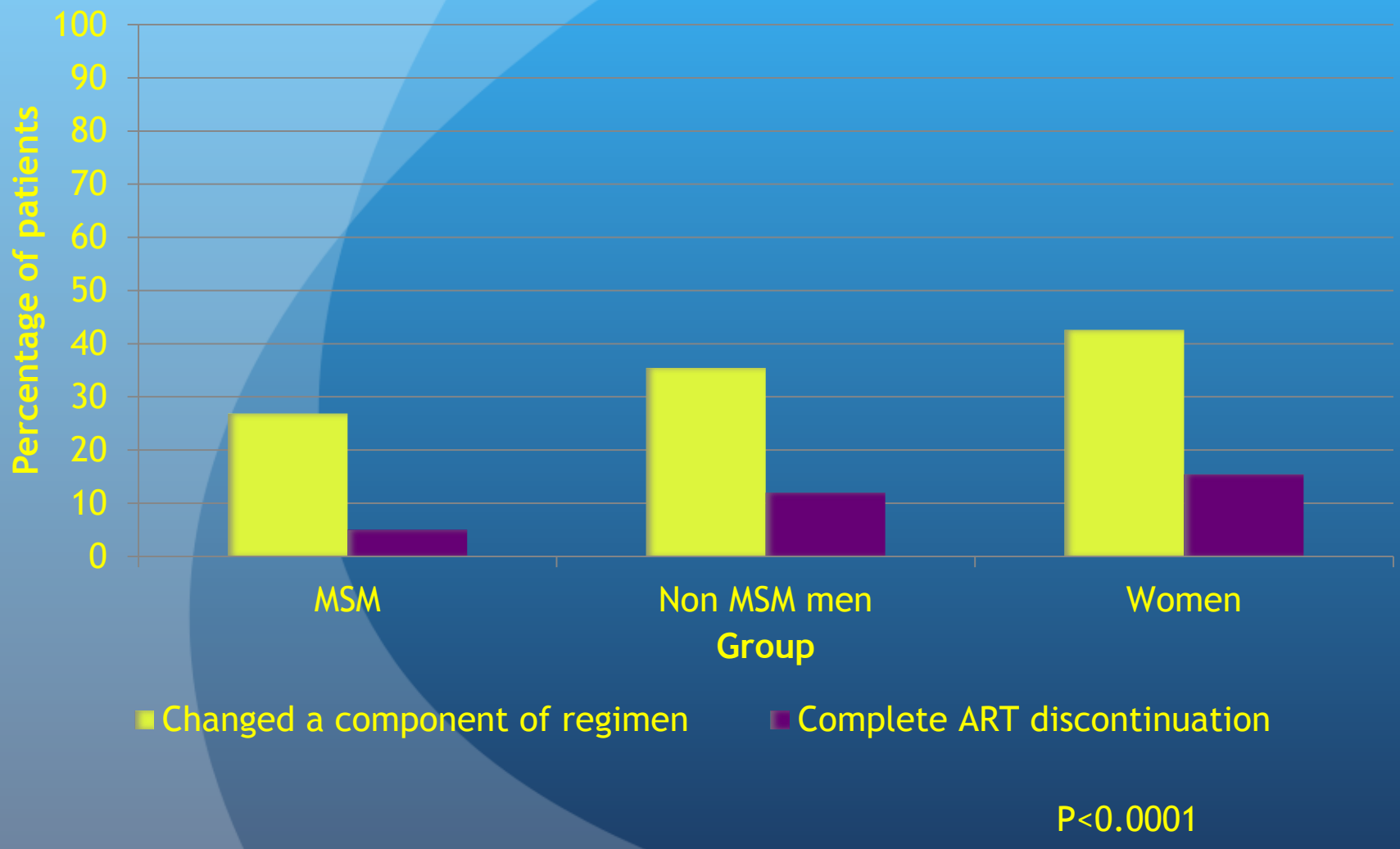


By 2 years	3.65%	7.56%	11.27%

P <0.0001

Virological failure: Individuals censored if they stop all ARVs

Treatment outcomes at 12 months (snapshot analysis)



P<0.0001

Sensitivity analyses

We investigated the sensitivity of our results to the definition of virological failure used:

- Consider complete treatment discontinuation as failure
- Exclude pregnant women
- Change viral load cut-off to 50 or 1000 copies/ml
- Change time cut-off from 6 to 4 months
- Stratify by baseline viral load
- Only consider virological failures more than one year after starting ART

All analyses gave consistent results

Adjustment for potential confounders

	Multivariable (adjusted) estimates		
	Other men vs. MSM	Women vs. MSM	p-value
	HR (95% CI)	HR (95% CI)	
Virological endpoints			
Virological suppression	0.83 (0.68, 1.02)	0.92 (0.76, 1.12)	0.19
Virological failure, censoring at complete ART discontinuation	3.69 (1.76, 7.74)	4.63 (2.26, 9.48)	0.0001
Treatment change endpoints			
Switch a least 1 drug	1.40 (1.08, 1.81)	1.92 (1.47, 2.50)	<0.0001
Complete ART discontinuation	2.28 (1.35, 3.83)	3.45 (2.20, 5.40)	<0.0001

Cox hazards regression model,
Adjusted for: age at start of ART, time from diagnosis to start of ART, pre-ART VL, pre-ART CD4, calendar date of starting ART, NRTI backbone type third drug type; ethnicity

Conclusions

Women experienced more virological failure than MSM and non-MSM men in our cohort

This seems to be independent of the use of ART to cover pregnancy only

Women are more likely to change components of their ART regimen

Complete discontinuation of ART was also more common amongst women

With thanks to the Royal Free HIV Cohort Database

Clinical: S Bhagani, F Burns, P Byrne, A Carroll, I Cropley, Z Cuthbertson, T Drinkwater, T Fernandez, E Garusu, D Grover, B Killingley, G Murphy, D Ivens, M Johnson, S Kinloch-de Loes, M Lipman, S Madge, N Marshall, H Montgomery, R Shah, L Swaden, M Tyrer, M Youle, D Webster

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