

Retention in care, mortality, loss to follow-up and viral suppression among naïve and experienced NNRTI-resistant individuals in a nationwide representative survey in Mexico

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BACKGROUND

- HIV pretreatment drug resistance (PDR) is associated with lower viral suppression (VS) and higher death rates¹
- Among antiretroviral treatment-naïve patients, resistance to any ART drug in Mexico is 13% and 9% for efavirenz/nevirapine^{1,2}
- Mexican HIV treatment guidelines do not recommend the use of routine resistance test before treatment initiation³
- Sociodemographic characteristics and levels of resistance among ART-experienced re-initiators are unknown in Mexico

We explored longitudinal associations of PDR in patients entering into care with different outcomes such as remaining in care, loss to follow-up (LTFU), VS, and death, which are not well described in Mexico.

METHODS

We analyzed PDR and sociodemographic data from 1623 patients that participated in a nationally representative PDR survey carried out in Mexico from 09/2017 to 03/2018 among patients starting or re-starting ART, with available follow-up data in Mexico's national ART database (SALVAR: Mexican System of distribution, logistic and ART surveillance). Participants were stratified into four groups according to prior ART exposure and presence of NNRTI-PDR (documented resistance to efavirenz or nevirapine): experienced+resistant, experienced+non-resistant, naïve+resistant and naïve+non-resistant)

Outcomes evaluated at the end of the follow-up:

- Proportion of patients remaining in care: Recorded as active patients in SALVAR dataset
- LTFU: Non-active patients due to: abandonment, change to security social system, unknown
- VS at end of follow-up: last viral load <200 copies/ml among those with VL available
- Death

Statistical analysis:

Socio-demographic characteristic of patients included in each group were described and compared using chi-square and Kruskal Wallis test. We also compared the simple proportion of patients with each outcome between groups. Multivariate models were developed to assess the relationship between ART exposure and NNRTI resistance and retention in care and VS, adjusted by demographics.

RESULTS

- Patients were followed for a median of 233 days (IQR: 167-288), 19% were female, median age was 30 years (IQR: 25-38), and median CD4 count 280 cells/mm³ (IQR: 136-459).
- Compared to other groups, the experienced resistant group had a higher proportion of women (45%), lower education; 44% in elementary or lower level and 78% of unemployed (Table 1).

	Experienced+non-resistant n=185 (11%)	Experienced+Resistant n=18 (1%)	Naive+non-resistant n=1273 (78%)	Naive+Resistant n=147 (9%)	p-value
Male; n(%)	122(66%)	10(55%)	1073(84%)	116(79%)	<0.01
Mean age; years(IQR)	34 (27 - 41)	35 (28 - 40)	29 (25 - 38)	30 (25- 40)	0.25
Risk of transmission; n(%)					
Heterosexual/Other	66(38%)	8(50%)	211(18%)	31(23%)	<0.01
MSM	74(43%)	4(25%)	757(64%)	74(56%)	
Heterosexual men	31(18%)	4(25%)	211(18%)	28(21%)	
Mean CD4 count; cells/mm ³ (IQR)	239 (115-443)	383 (182-534)	281 (140-458)	304 (134-466)	0.31
Education; n(%)					
Elementary or lower	54(30%)	8(44%)	189(15%)	25(18%)	<0.01
High school or higher	126(70%)	10(55%)	1040(85%)	117(82%)	
Unemployed; n(%)	94(53%)	14(78%)	444(37%)	52(38%)	<0.01

Table 1. Characteristics at time of resistance test by group. Other risk transmission includes IDU, n=38

RESULTS (cont.)

- At the end of the follow-up period, 1373 (84%) patients remained in care and 1198(78%) achieved suppression among 1528 individuals with viral load available.
- The proportion of deaths was similar among groups (p=0.22), but the proportion of active patients and LTFU were significant different, p<0.01 for both outcomes (Figure 1)

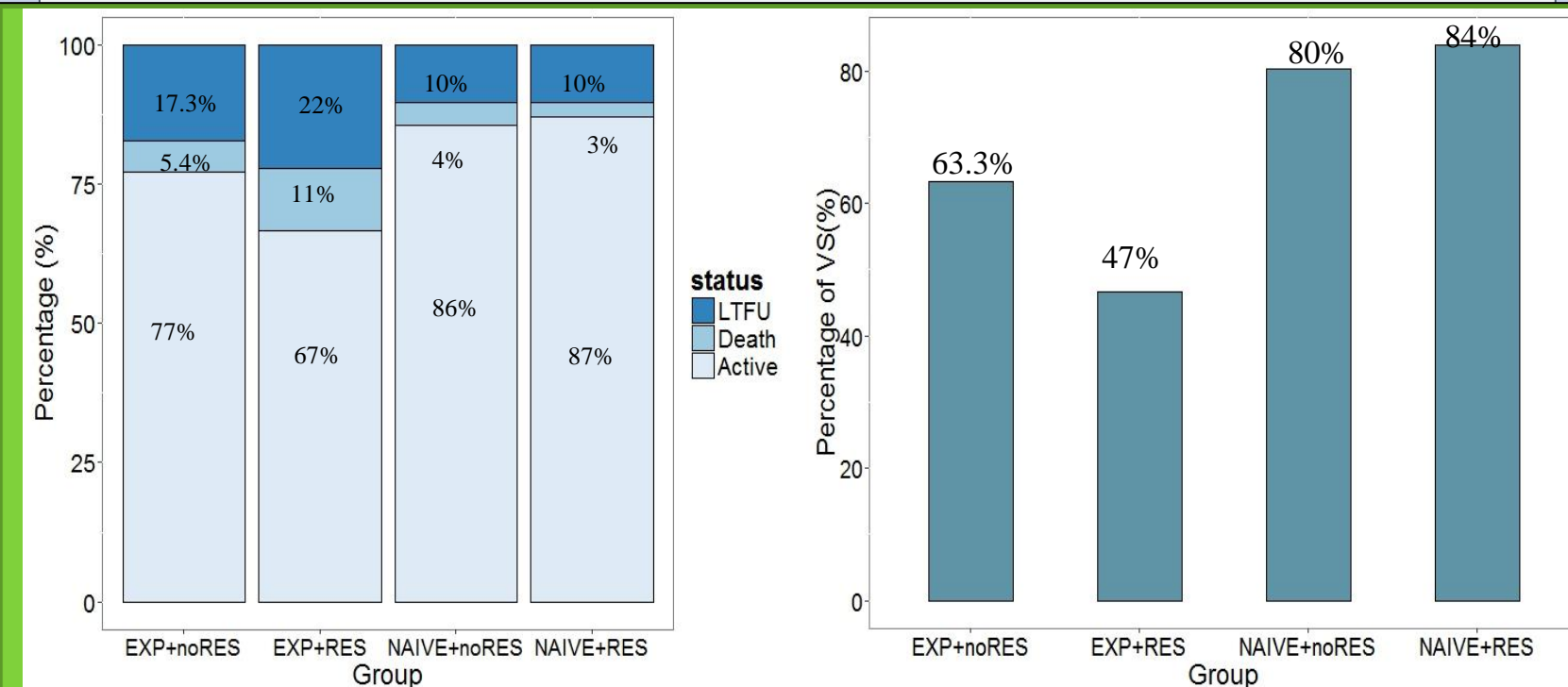


Figure 1. Outcomes at end of follow-up by group

At end of follow-up, active patients who did not die or abandoned clinical care were classified as active. In SALVAR, abandonment is recorded by cause of abandonment. In the right panel, viral suppression recorded as patients with a last viral load under 200 copies/mL.

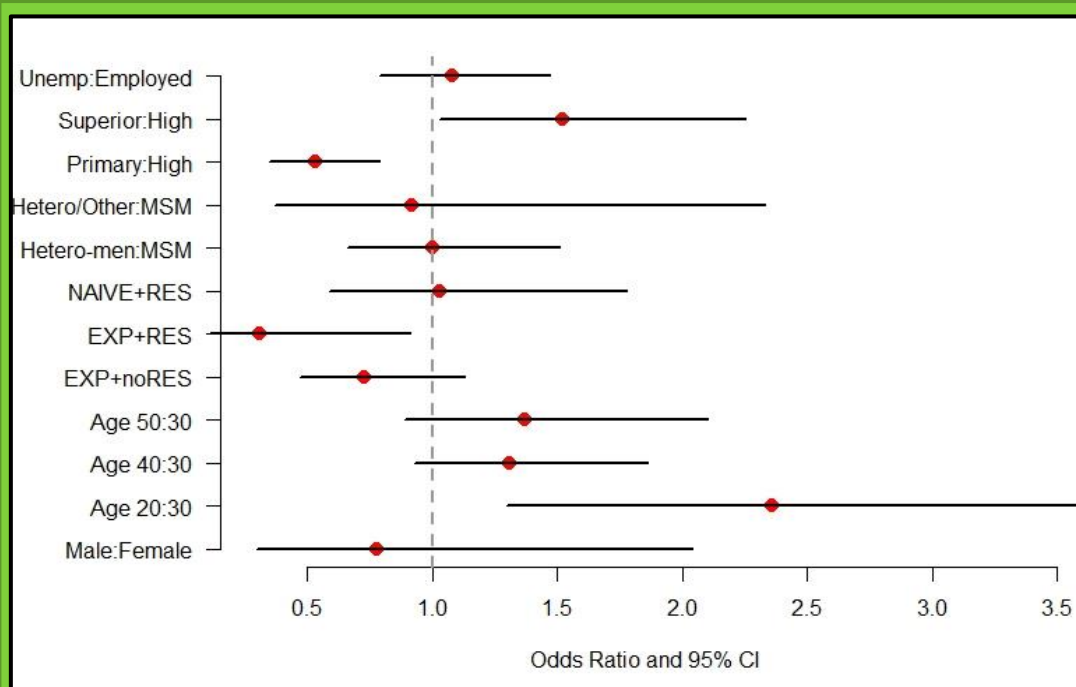
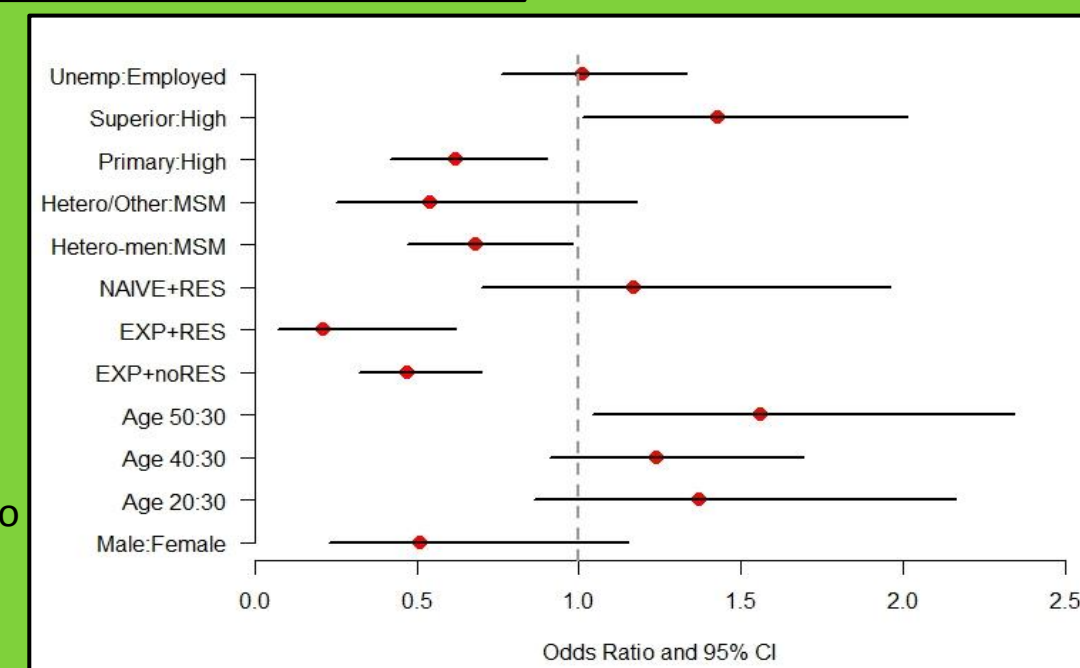


Figure 2. Adjusted OR for retention in care.

After multivariable correction, experienced+resistant compared to naïve+non-resistant patients had significantly lower odds of remaining in care (aOR=0.31, 95%CI: 0.11-0.91). *Viral load and CD4 count at resistance test were also included in the models.

Figure 3. Adjusted OR for viral suppression.

After multivariable correction, experienced+resistant patients (aOR=0.20; 0.07-0.62) and experienced+non-resistant patients (aOR=0.47; 0.32-0.70) had lower odd of VS compared to naïve+non-resistant patients.



CONCLUSION

Among patients entering into care, the group of ART experienced patients, especially those with PDR, showed the worst clinical outcomes compared to ART-naïves. This group was enriched with women, persons with lower education, and unemployed individuals, which suggests higher levels of social vulnerability.

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