

# Resistance mutations detected by OLA of HIV-1 DNA at the initiation of nevirapine containing ART are associated with virologic failure

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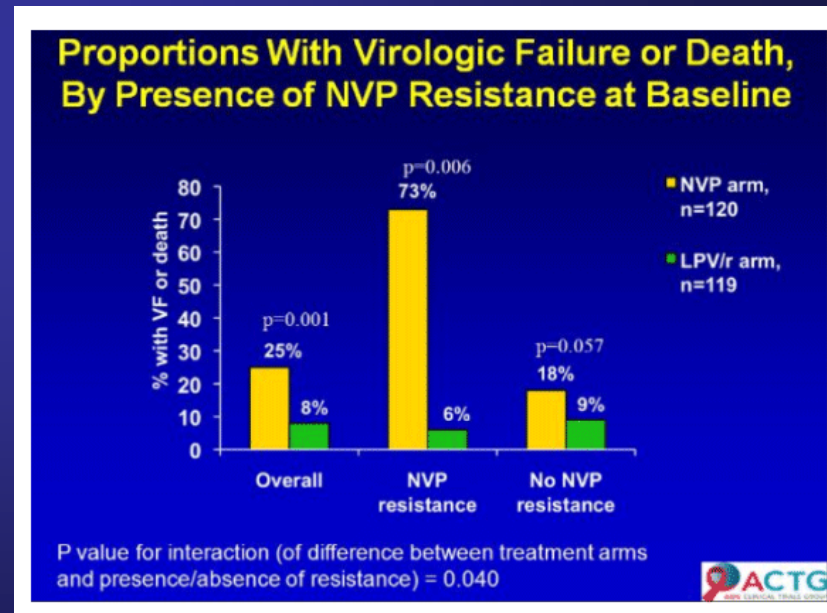
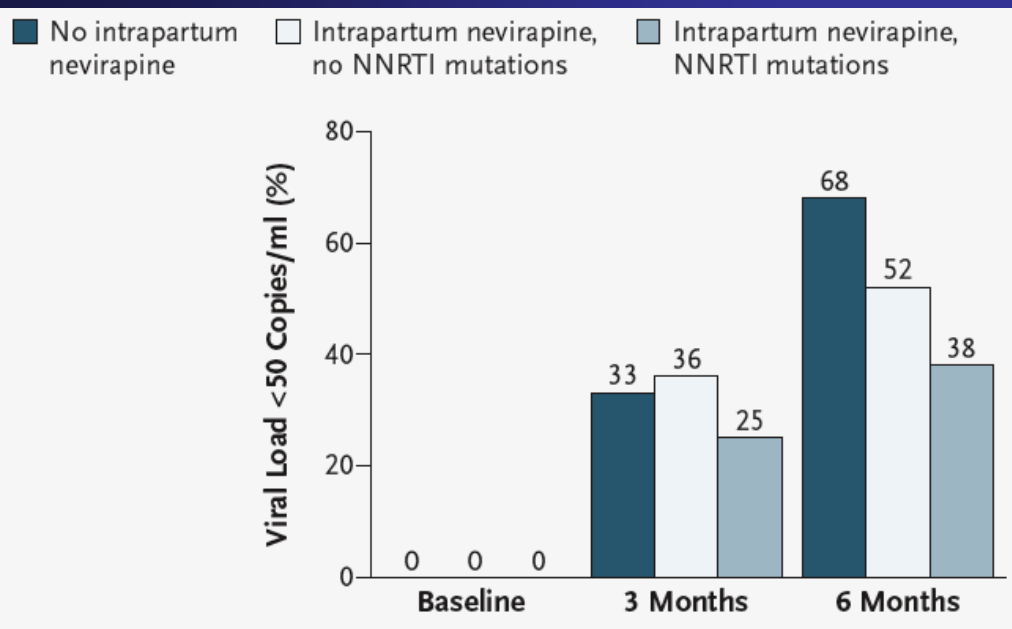
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# Intrapartum Exposure to Nevirapine and Subsequent Maternal Responses to Nevirapine-Based Antiretroviral Therapy

Jourdain, *et al*, NEJM, 2004

Lockman, *et al*, NEJM, 2007

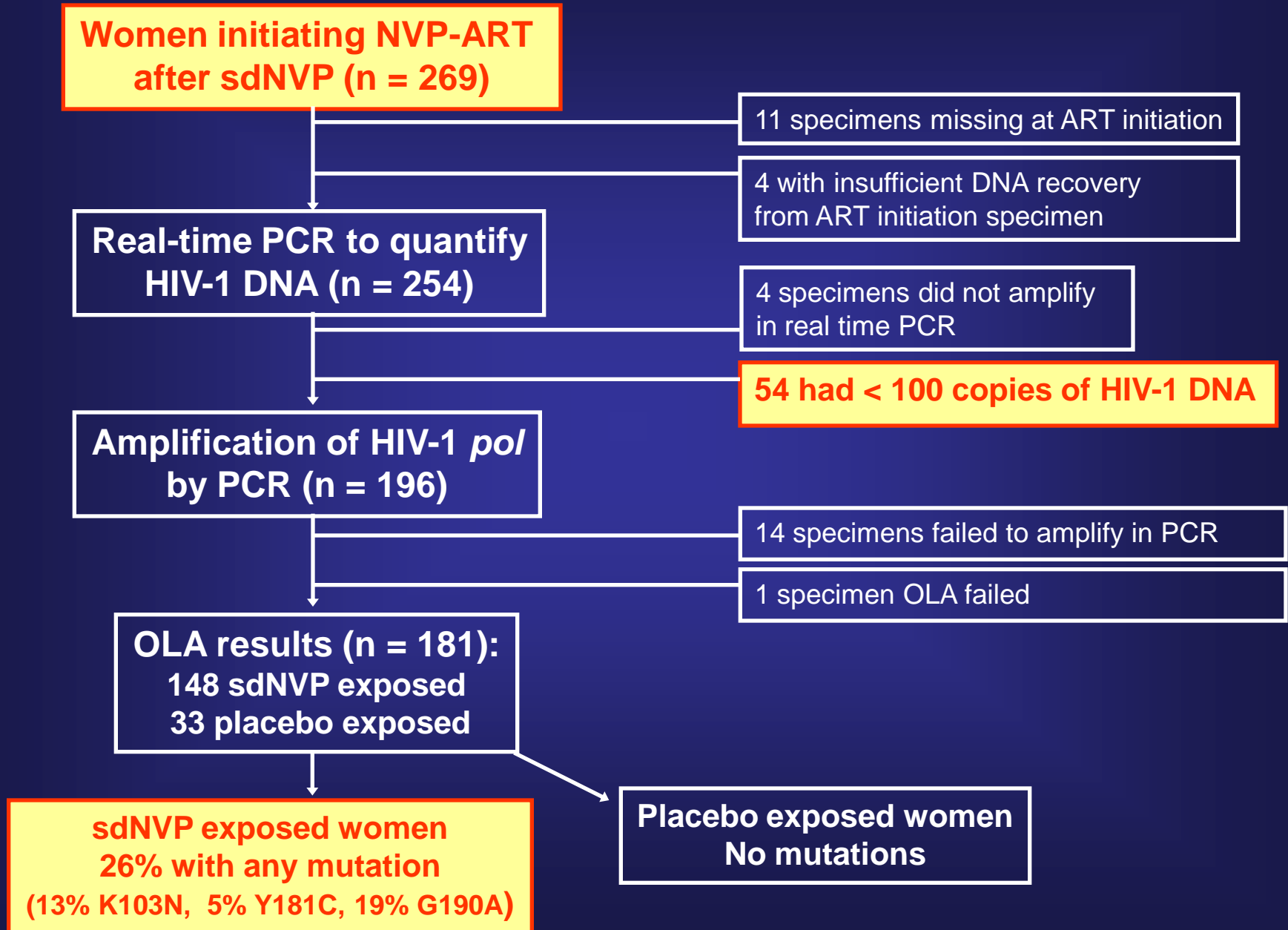
Lockman, *et al*, CROI, 2009



HIV-1 Resistance Testing 10d post-partum not statistically associated with virologic failure  
 - Jourdain et al, NEJM 2004

HIV-1 Resistance Testing at ART start seemed to be associated with virologic failure  
 - Jourdain et al, NEJM 2004

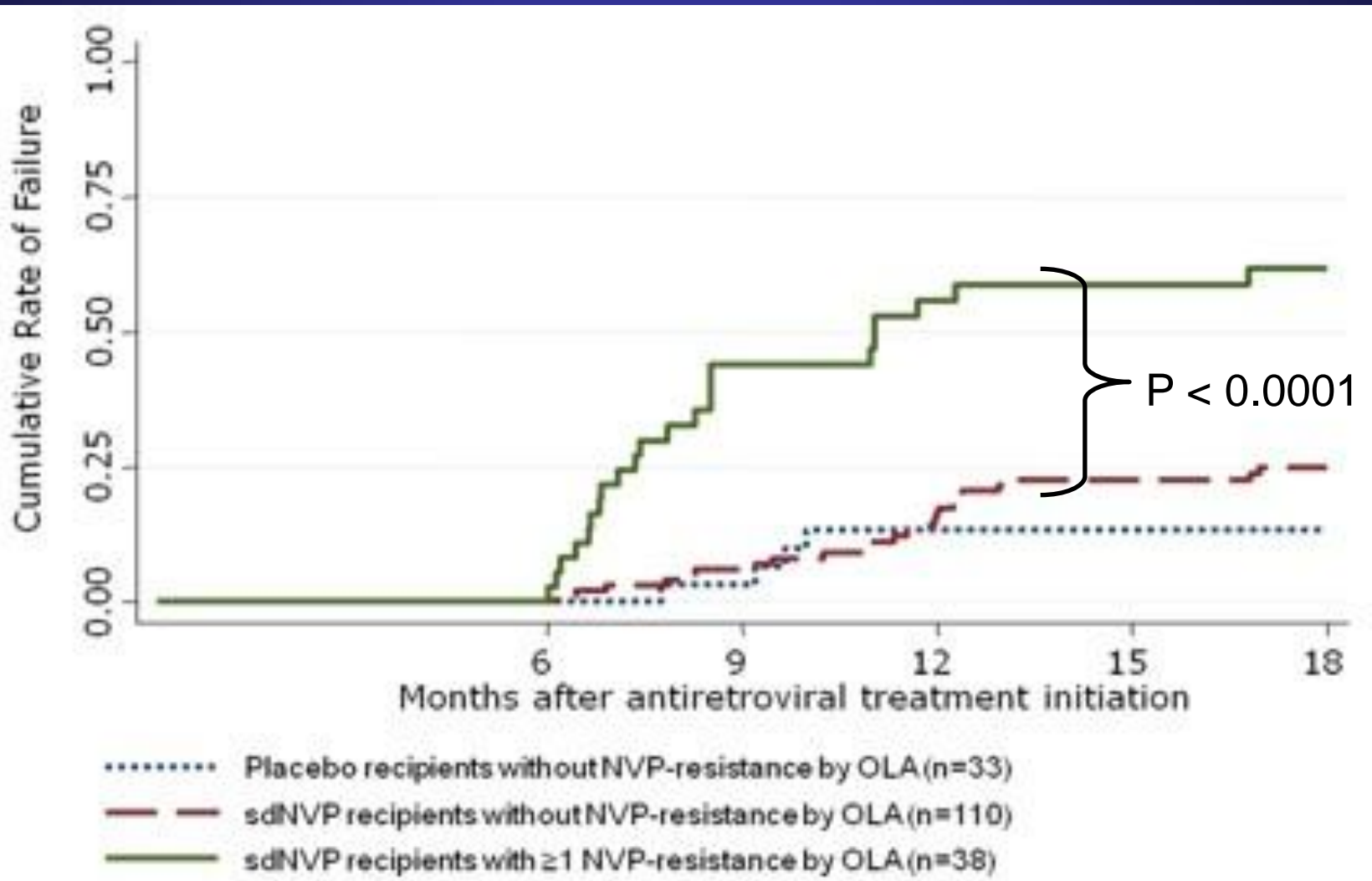
# Women Analyzed & Oligonucleotide Ligation Assay (OLA) Results



# Hazard Ratios for Virological Failure (n = 148 sdNVP-exposed)

Characteristic	Hazard Ratio (95% CI)	P value	Adjusted Hazard Ratio (95% CI)	P value
<b>Mutations (by OLA)</b>				
K103N	4.94 (2.61-9.36)	< 0.001	*	
Y181C	6.10 (2.55-14.6)	< 0.001	*	
G190A	2.84 (1.52-5.32)	0.001	*	
≥ 1 NVP-resistance mutations (K103N, Y181C and/or G190A)	3.81 (2.13-6.82)	< 0.001	2.47 (1.34-4.54)	0.004
≥ 2 NVP-resistance mutations (K103N, Y181C and/or G190A)	5.56 (2.85-10.85)	< 0.001	*	
<b>Plasma HIV-1 RNA</b>				
above median (4.58 log <sub>10</sub> c/ml) during pregnancy	2.42 (1.32-4.44)	0.004	*	
above median (4.77 log <sub>10</sub> c/ml) at initiation of NVP-ART	2.21 (1.20-4.05)	0.01	2.39 (1.27-4.47)	0.007
<b>CD4 cell count</b>				
below median (183 cells/mm <sup>3</sup> ) during pregnancy	2.03 (1.11-3.73)	0.02		NS
below median (152 cells/mm <sup>3</sup> ) at initiation of NVP-ART	1.16 (0.65-2.08)	0.61		
<b>Time from sdNVP to ART ≤ 6 months</b>	3.35 (1.78-6.29)	< 0.001	3.20 (1.65-6.21)	0.001
<b>NNRTI resistance detected 10d post partum</b>	1.38 (0.77-2.50)	0.28		

# Outcome based on OLA results (n = 181):



# Summary & Conclusions:

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- NVP resistance by OLA (> 5%) from HIV-1 DNA at ART-start was independently associated with virological failure
- ART outcomes similar in sdNVP-exposed women with no OLA mutations and placebo-exposed women
- Findings suggest that HIV-1 DNA resistance testing with a more sensitive method may be an effective pre-ART resistance testing strategy

# Support:

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## USA:

National Institutes of Health (NIAID and NICHD)

## FRANCE:

Agence Nationale de Recherches sur le Sida  
Institut de Recherche pour le Développement  
Institut National d'Etudes Démographiques

## THAILAND:

Ministry of Public Health  
Department of Technical and Economic Cooperation  
  
Global Fund to fight AIDS, Tuberculosis and Malaria