

# The impact of opioid substitution treatments on self-reported symptoms in individuals HIV-infected through drug use receiving HAART: results from the MANIF 2000 cohort study

Carrieri MP<sup>1</sup>, Roux P<sup>1</sup>, Cohen J<sup>1</sup>, Ravaux I<sup>2</sup>, Dellamonica P<sup>3</sup>, Protopopescu C<sup>1</sup>, Spire B<sup>1</sup>, Rosenblum A<sup>4</sup>.

<sup>1</sup>Inserm U912 (SE4S), IRD, ORS PACA, Marseille, France

<sup>2</sup>Hôpital La Conception, Service des Maladies Infectieuses, Marseille, France

<sup>3</sup>Hôpital L'Archet, Service des Maladies Infectieuses, Nice, France

<sup>4</sup>National Development and Research Institutes, New York

# Background

- Opioid substitution treatments (OST) introduced in France between 1995-1996
- Delay partially compensated for by the rapid scale-up of OST in primary care.
- Free access to highly active antiretroviral treatments (HAART) for all HIV-infected individuals since 1996

# The MANIF 2000 cohort

## Impact of OST on HIV-risk related outcomes

- ❖ OST is associated with less syringe sharing in older IDUs (Reynaud Maurupt 2000)
- ❖ OST is associated with a reduction in unsafe sexual behaviors (Vincent 2004)

## HAART- related outcomes

- ❖ Receiving buprenorphine during HAART enhance adherence (Moatti 2000)
- ❖ Access to and effectiveness of OST contribute to sustaining adherence to HAART (Roux 2008)
- ❖ Retention in OST is associated with long-term virological success (Roux 2009)

# The MANIF 2000 cohort

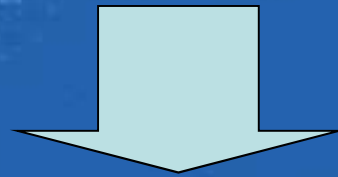
- **MANIF 2000** enrolled individuals HIV-infected through injecting drug use in a total of 12 hospital centers in **M**arseilles, **A**vignon, **N**ice and **I**le de **F**rance.
- The cohort was designed to study HIV progression with drug use, the impact of OST and HAART on patients' outcomes
- Between 1995-1998, 467 patients with moderate immunosuppression (Stage A,B and  $CD4 > 300 \text{ mm}^3$ ) were enrolled and followed up every 6 months thereafter.

# Methods: Questionnaires

- **A standardized medical form collected clinical, HIV treatment and laboratory data**
- **A face-to-face interview gathered psycho-social information. It asked about adherence to HAART and patient's personal experience with HIV and care**
- **A self-administered questionnaire collected information about drug and alcohol use, HIV risk practices, use of psychotropic drugs, access to OST and depressive symptoms (CES-D)**

# RESULTS: Participants

**467** patients enrolled



**106** patients receiving both OST and HAART during follow-up

accounting for


**342** visits with Complete data

## **Objective**

**To compare the impact of buprenorphine and methadone on self-reported HAART-related symptoms in HIV-infected patients through injection drug use.**

# Methods

- ❖ Focusing only on patients receiving methadone or buprenorphine during HAART
- ❖ Controlling for the impact of non-random assignment to buprenorphine and methadone using Heckman approach (**first step model** – probit model)
- ❖ Evaluating the impact of methadone and buprenorphine on the number of self-reported side-effects after controlling for
  - ❖ non random assignment
  - ❖ other possible confounders



Use of a **second step model**- Poisson model based on Generalized Estimating Equations (GEE) with bootstrap estimates (N=106, 342 visits)

# Results (1)

First step model: Determinants of methadone receipt were

- unemployment
- elevated alcohol consumption (>4 AU/day)
- cocaine use
- smoking >20 cigarettes/day

# Results (2)

## Second step model: Multivariate analysis

**	Number of visits (%) or median [IQR]	Adjusted IRR	95 % CI*	p-value*
OAT				
Buprenorphine	231 (67.5)			
Methadone	111 (32.5)	0.72	(0.51 ; 0.99)	0.05
Depressive symptoms <sup>a</sup>	211 (61.7)	1.43	(1.23 ; 1.78)	<10 <sup>-3</sup>
Age	37 [34-42]	1.27	(1.01 ; 1.53)	0.03
Employment	80 (23.4)	0.73	(0.54 ; 0.94)	0.03
Daily cannabis consumption	149 (43.6)	1.39	(1.16 ; 1.78)	0.003
Withdrawal symptoms	35 (10.3)	1.39	(1.01 ; 1.70)	0.01
Anxiolytics consumption	136 (39.8)	1.28	(1.03 ; 1.54)	0.03

\*Bias-corrected confidence intervals and p-values are based on 400 bootstrap replications.

\*\* Time varying variables refer to the 6 months prior to the visit

<sup>a</sup> Patients were defined with depressive symptoms if CES-D>17 for men and >23 for women.

## Results (3)

After adjustment for non random assignment, factors independently associated with a higher number of self-reported side effects are:

- ❖ depressive symptoms
- ❖ unemployment
- ❖ daily cannabis consumption
- ❖ age
- ❖ use of anxiolytics
- ❖ experience of withdrawal symptoms
- ❖ **individuals receiving methadone exhibited a significantly lower number of self-reported side effects**

# Conclusions

- ❖ Methadone patients receiving HAART appear to perceive HAART-related side-effects to a lesser extent.
- ❖ Further research is needed using experimental approaches on different populations
- ❖ Future directions in research should combine specific HAART regimens and OST to identify the best combinations for maximizing HAART outcomes and minimizing the burden of perceived toxicity and medical interactions

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## **MANIF 2000 Study Group**

C Boirot, AD Bouhnik, MP Carrieri, JP Cassuto, M Chesney, J Cohen, P Dellamonica, P Dujardin, H Gallais, JA Gastaut, P Kurkdji, G Lepeu, D Mechali, JP Moatti, J Moreau, M Nègre, Y Obadia, I Poizot-Martin, C Pradier, D Rey, C Rouzioux, P Roux, A Sobel, B Spire, F Trémolières, V Villes, D Vlahov

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