

# Diversion of buprenorphine by sniffing or injection : results from a survey in south-eastern France (Subazur)

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# Background

- To date, 80.000-90.000 individuals in France have access to buprenorphine mainly through primary care
- Buprenorphine remains the only treatment option for those patients who prefer to start opioid substitution treatment (OST) in primary care.
- Buprenorphine diversion by mode of administration or to the black market has already been widely documented in France
- In patients on buprenorphine, diversion may be regarded more as a non-adherence behaviour to physician's recommendations than a mere misuse.

# Contexte

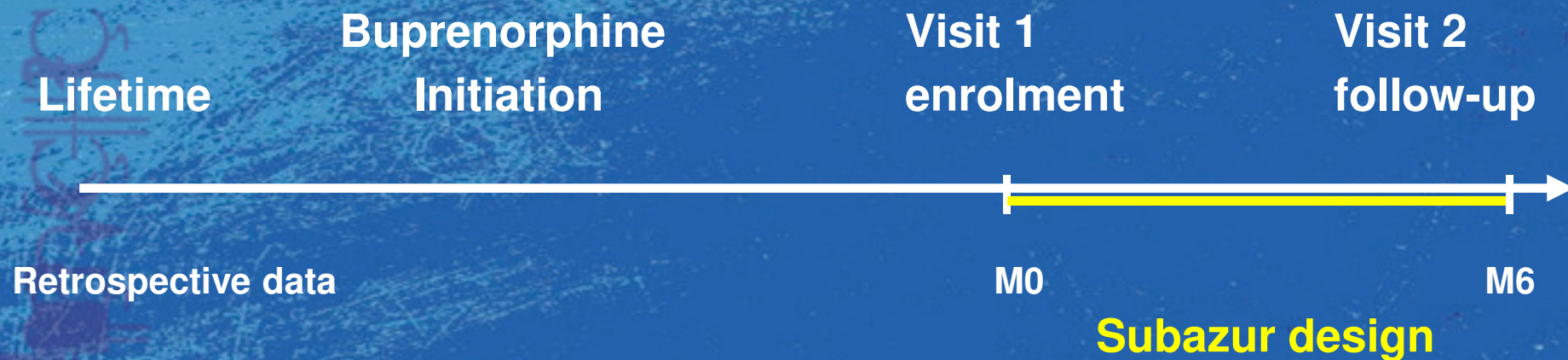
- Cochrane reviews clearly shows that patients receiving buprenorphine have the same outcomes than patients on methadone provided that dosages are high enough (Mattick et al. 2004)
- A French study (Vidal-Treccan, DAD 2003) has already suggested the relationship between low prescribed dosages and buprenorphine injection.
- However, it is still unknown :
  1. To what extent lack of satisfaction with dosages or care received can influence buprenorphine diversion
  2. Whether buprenorphine injection and buprenorphine sniffing have the same determinants

# Objectives

- Describe demographic, psychosocial characteristics, addictive behaviours and diversion in stabilised patients receiving office-based buprenorphine
- Evaluate whether satisfaction with care may predict diversion by sniffing or injection
- Identify predictors of:
  - buprenorphine injection
  - buprenorphine sniffing

# Design

- Longitudinal study recruiting patients between October 2004 and May 2005
- 32 physicians enrolled in Bouches du Rhone and Vaucluse (south-eastern France)
- 111 stabilized patients receiving office-based buprenorphine
- 2 longitudinal assessments (M0-M6)
- Questionnaires by phone interviews



- At the enrolment visit : information collected retrospectively about patient's addictive behaviors during lifetime or before buprenorphine initiation.
- At both interviews : information about recent drug-related behaviors and experience with treatment
- Two logistic regression models based on Generalised Estimating Equations (GEE) were used to identify predictors of buprenorphine injection or buprenorphine sniffing.

# Results

- 111 stabilized patients (>3 months buprenorphine) receiving office-based buprenorphine were enrolled
  - males represented 68%
  - median age = 38 years
  - 40% reported being HCV-infected and 17% HIV-infected
- 75 patients were followed up 6 months after the enrolment
- Overall these patients accounted for 186 visits that were included in the data analyses

## Socio-economic characteristics at M0 (Subazur study, N=111)

	N (%)
Having child(ren)	57 (54)
Living in stable relationship	48 (45)
High school certificate	26 (27)
Employed	53 (49)
Stable housing	97 (91)
Owner or renter of her/his home	12 (13)
Good health status	84 (79)



# Self-reported addictive characteristics recorded at M0 (Subazur Study, N=111)

	N (%)
Buprenorphine injection <sup>1</sup>	35 (32)
Heroin dependence <sup>2</sup>	85 (77)
Cocaine dependence <sup>2</sup>	14 (13)
Alcohol dependence <sup>2</sup>	9 (8)
Alcohol dependence (CAGE) <sup>3</sup>	27 (24)
Experience of overdose	26 (24)
Suicide ideation or attempts	44 (40)
Poly-drug dependence <sup>4</sup>	21 (19)

<sup>1</sup> since buprenorphine initiation  
<sup>2</sup> before starting buprenorphine

<sup>3</sup> in the year prior to the visit  
<sup>4</sup> two or more non prescribed drugs

# Results

Among those with complete data about buprenorphine diversion at M0, a poor overlap of the two practises was observed :

	No BUP sniffing	BUP sniffing	Total
No BUP injection	53	21	74
BUP injection	23	12	35
Total	76	33	109

# Diversion by injection

- 36 patients reported buprenorphine injection in 40 visits
- Factors associated with buprenorphine injection ( $p < 0.20$ ) and eligible for the final model were
  - ❖ Not living in a stable relationship
  - ❖ History of alcohol dependence or alcohol dependence in the year prior to the visit
  - ❖ Experience of overdose or suicide
  - ❖ Longer time since first injection
  - ❖ Unsanctioned use (purchase or resale)
  - ❖ Perception of inadequate dosage
  - ❖ High buprenorphine dosages

# Factors independently associated with self-reported buprenorphine injection (Subazur, N=111 patients, 186 visits)

	adjusted OR	p-value
<b>Pre-treatment factors :</b>		
Median time since the first Injection (per 1 year increase)	1.05 [1.01-1.10]	0.01
<b>Time-dependent factors :</b>		
Suicide ideation or attempt	2.6 [1.2-5.7]	0.02
Dosage perceived as inadequate	2.7 [1.1-7.0]	0.04

# Diversion by sniffing

- 33 patients reported buprenorphine sniffing in 45 visits
- Factors associated with buprenorphine sniffing ( $p < 0.20$ ) and eligible for the final model were:
  - ❖ Younger age
  - ❖ No children
  - ❖ No high school certificate
  - ❖ Not living in a stable relationship
  - ❖ Not owner or renter
  - ❖ Childhood outside family or with just one parent
  - ❖ History of drug sniffing (other than buprenorphine)
  - ❖ Shorter time since first injection
  - ❖ Non satisfaction with BUP treatment
  - ❖ Unsanctioned use
  - ❖ Problems with the justice

# Factors independently associated with self-reported buprenorphine sniffing (Subazur, N=111 patients, 186 visits)

	adjusted OR	p value
<b>Pre-treatment variables :</b>		
Not living in a stable relationship	3.8 [1.5-9.8]	0.006
Median time since the first Injection (per 1 year increase)	0.95 [0.91-1.00]	0.05
<b>Time-dependent factors :</b>		
History of drug sniffing*	5.6 [2.0-15.8]	0.001
Unsatisfied with BUP treatment	3.8 [1.2-11.9]	0.02

\* other than buprenorphine

# Conclusions

- Buprenorphine recommended dosage are lower in France than elsewhere.
- While buprenorphine dosage may be a cause of buprenorphine injection, this treatment is felt as inappropriate by buprenorphine sniffers.
- Buprenorphine injection or sniffing should be regarded more as a non-adherence response to inadequate care than a true “misuse”.
- Individuals who divert buprenorphine by sniffing do not overlap with those who report buprenorphine injection.

# Conclusions

- **However, both behaviors are symptoms of :**
  - ❖ **a need for a wider spectrum of treatment options and strategies also available in primary care**
  - ❖ **a better coordination between the different health care professionals to properly deliver comprehensive care**
- **Buprenorphine injection during treatment is a non-adherence behavior that is comparable to heroin use during methadone treatment**
- **Both may be the consequence of inappropriate dosage prescription**
- **Combined harm reduction approaches based on both wide access to OST and needle syringe programs should be introduced in countries that have to face HIV and HCV epidemics among drug users.**



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