



## Police custody following drink-driving: A prospective study

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### ABSTRACT

**Background:** Drink-driving is a crime and traffic offences are a common cause of detention in police custody. Legal assessment of alcohol intoxication is based on breath or blood testing. We hypothesize that refusal of breath alcohol testing or inability to perform it can correspond to singular medical characteristics of the detainee, possibly assaulted or injured during the arrest. Our objective was to determine medical characteristics of detainees held in custody for drink-driving.

**Methods:** Prospective monocentric study (April–October, 2010) of drink-drive arrestees. Controls were persons aged over 18 detained for other reasons than drink-driving. Data collected concerned persons' characteristics and reported assaults or observed injuries.

**Results:** 223 drivers were tested positive for breath alcohol level and 55 suspected drink-drivers refused or were not able to complete breath test. 2212 consecutively examined persons served as controls. Drink-drive arrestees requested medical examination more rarely (18% and 7%, vs. 43%,  $P < 0.0001$ ) and drivers tested positive for breath alcohol were more frequently alcohol abusers (25% vs. 14%,  $P < 0.0001$ ) than controls. Drivers who did not complete breath test more often reported assaults than those tested positive for breath alcohol (22% vs. 8%,  $P = 0.007$ ). They had more frequent traumatic injuries than those tested positive and than controls (29% vs. 11% and 17%,  $P = 0.003$  and  $0.02$ ). Only 1% of drink drivers were unfit for detention after medical examination.

**Conclusion:** Physicians need to give attentive care to detained drink-drivers. Special attention should be paid to drink-drivers who refused or were not able to complete breath alcohol measurement.

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### 1. Introduction

Drink-driving is a common problem. In a nationally representative self-report survey in the UK, one in eight drivers had driven after drinking what they believed was an “over the limit” amount of alcohol in the previous year (Brasnett, 2004). In the US, the latest National Roadside Survey in 2007 indicated that about 8% of nighttime drivers were drinking and 2–3% were alcohol-impaired (Fell et al., 2010). In 2008 in France, 10% of all personal accidents and 28% of road deaths were associated with illegal blood alcohol concentration (0.5 g/L) in the driver (Observatoire national interministériel de sécurité routière, 2008).

Drink-driving is a crime. Legal assessment of alcohol intoxication is based on breath or blood testing. First, police officers expect the driver to perform breath alcohol testing, which is the usual, non-invasive procedure. According to French law, if the driver refuses this test or is unable to perform it, a physician is required for blood

testing. However, traffic offences, often related to drink-driving, were absent from French governmental statistics on police custody until late 2009 (Jarrassé, 2010), which suggests that drink-driving custody is insignificant. Medical data related to health screening and alcohol issues in police custody are scarce, whatever the country (Naik and Lawton, 1996; Man et al., 2002; Chariot et al., 2008; McKinnon and Grubin, 2010; Heide et al., 2011).

We hypothesized that refusal of breath alcohol testing or inability to perform it could correspond to singular medical characteristics of the detainee, possibly assaulted or injured during the arrest.

Such detainees could require particular medical attention. In the present study, our objective was to determine medical characteristics and addictive behaviours of detainees held in police custody for drink-driving and to collect data regarding reported assaults or observed injuries in these individuals.

### 2. Methods

#### 2.1. Study population

We conducted a prospective monocentric study (April 23–October 9, 2010) in the forensic medicine unit of Jean-Verdier Hospital in Bondy (Seine-Saint-Denis), a

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suburban area near Paris. We included all patients aged 18 or more held in police custody for proven or suspected driving under the influence of alcohol and examined by a physician for assessment of fitness for detention. Whatever the motive of detention, any persons placed in police custody may, at their request, be examined by a doctor. A medical examination can be also performed at the request of a police officer or of the person's family (French code of criminal procedure, 2011). Nearly two thirds of arrestees in the department of Seine-Saint-Denis have medical examination during custody (Paris Police Headquarters 2011, unpublished data).

## 2.2. Measures

During medical examination, we collected data concerning persons' characteristics, their DSM IV-based evaluation of addictive disorders, their own experience of police custody, and reported assaults or observed injuries (Table 1). No specific examinations were performed or questions asked for research purposes only.

Perceived health was evaluated by the three global health indicators of the Minimum European Health Module (Minimum European Health module, 2010; Renahy et al., 2010). The question "Do you have a chronic health condition?" could be answered by yes, no, or no opinion expressed. The question "Do you have a severe limitation of at least six months' duration in performing activities people usually engage in?" could be answered by severely limited, limited, or not limited at all, don't know or refusal. The question "How would you rate your overall health?" could be answered by very good, good, fair, bad, very bad, don't know or refusal. Detainee's opinion on custody was requested and rated as very good, good, fair, bad, very bad, don't know or refusal.

## 2.3. Evaluation

We compared drivers tested positive for breath alcohol level (breath alcohol concentration higher than 0.40 mg/L), referred to as group 1, and drivers suspected by judicial authorities to drive under the influence of alcohol, who refused or were not able to complete breath test, because of heavy inebriation, referred to as group 2. Controls were persons over 18, consecutively referred to us, held in police custody (June 22, 2010–August 31, 2010) and who were detained for other reasons than suspicion of drink-driving under the influence of alcohol, referred to as group 3.

## 2.4. Analysis

We searched differences between all 3 groups. Tests of significance included ANOVA, Fisher's and chi-square tests, as appropriate (GraphPad InStat 3.1 software, San Diego, CA). When overall comparisons showed significant differences, we made subsequent pairwise comparisons. Results were considered significant for *P* values below 0.05.

## 3. Results

### 3.1. Patients included

A total of 278 drivers were included, as follows: 223 in group 1 and 55 in group 2. The 278 drink-drivers (groups 1 and 2) accounted for 3.4% of all 8240 detainees over 18 examined in police custody by a physician from our unit during the time of the study (Fig. 1). Group 3, i.e. controls, included 2212 persons. Table 1 presents the characteristics of all 3 groups and overall intergroup comparisons showing significant differences.

### 3.2. Patients' characteristics

Male predominance was observed in all 3 groups. Mean age of drink-drive arrestees from both groups was higher than controls (ANOVA:  $F=57.03$ ,  $P<0.0001$ ; Tukey–Kramer tests: 1 vs. 2,  $Q=2.31$ ,  $P>0.05$ , 95% CI  $-6.98-1.25$ ; 2 vs. 3,  $Q=4.91$ ,  $P<0.01$ , 95% CI  $1.79-9.25$ ; 1 vs. 3,  $Q=14.5$ ,  $P<0.001$ , 95% CI  $6.47-10.31$ ). Lifetime history of police custody, as declared by the arrestees, showed that a majority of detainees from all 3 groups had already been detained in custody. Intergroup comparisons showed that drivers tested positive for breath alcohol were more frequently arrested for the first time in their life than controls ( $P<0.0001$ ).

Drink-drive arrestees from both groups requested medical examination more rarely than controls (chi-2,  $P<0.0001$  and  $<0.0001$ ). They also received medication less frequently during custody ( $P<0.0001$  and  $P=0.01$ ). Drivers tested positive for breath alcohol were more frequently alcohol abusers than controls ( $P<0.0001$ ). They were less frequently cannabis consumers than those who refused or were not able to complete breath alcohol measurement and than controls ( $P=0.03$  and  $<0.0001$ ).

Drivers who refused or were not able to complete breath alcohol measurement more often reported assaults than those tested positive for breath alcohol ( $P=0.007$ ). They had more frequent traumatic injuries than those tested positive and than controls ( $P=0.002$  and  $0.03$ ). The proportion of them reporting assaults or presenting traumatic injuries was also higher ( $P=0.003$  and  $0.02$ ). However, reports of assaults were less frequent in drivers tested positive for breath alcohol than in controls ( $P=0.01$ ).

Only 1 and 4% of drink drivers were unfit for detention after medical examination (3% of controls). Most detainees were considered unconditionally fit for detention (73–80% in each group). No individual intergroup differences were observed.

## 4. Discussion

In the present study, we found that drink-drivers had a more limited experience of police custody than controls and requested medical examination more rarely. We also identified some indirect evidence of violence experienced by drink-drivers who refused or were not able to complete breath alcohol measurement: more frequent reports of assaults than those tested positive for breath alcohol and more frequent traumatic injuries.

The present study explored for the first time the situation of drink-drive arrestees. Furthermore, we investigated differences between drivers tested positive for breath alcohol and those who refused or were not able to complete breath alcohol measurement. Man et al. (2002) considered detainees arrested for alcohol-related offences, regardless of the cause of arrest. The review by Naik

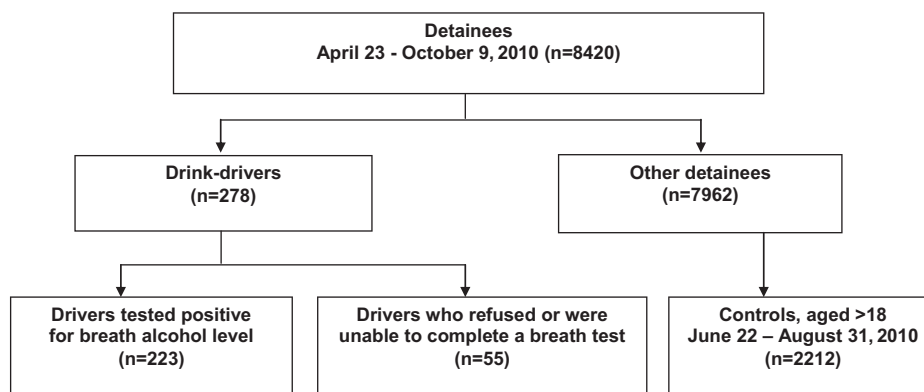


Fig. 1. Flow of included detainees.

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