Epidemiological studies available in France

Following some former epidemiological studies led in the general population, consumption of psychoactive medicinal drugs concerned 18% of adults, females for the most part of them (70%), with a high relative age (55.5 years); 45% of them had used those drugs during the year before the study and 25% used them since more than 10 years (Haeusler 1988). In teenagers, 8% were multiple users and 59% had already used illicit drugs, 37% desire for them and 32% used illicit psychotropic drugs. The studies led in care centers for drug addicts shown that heroine was the most common but also that alcohol and licit psychotropic drugs were used by a third of patients (Facy 1994). A study led in emergency units shown, that among patients using psychotropic drugs (licit or not), 15% came for an accident. For daily use, benzodiazepines (BZD) were the most common (39%) ahead of heroine (28%) and alcohol (54%). For casual and daily use, BZD the first drugs (75%), ahead of alcohol (54%), heroine (44%) and cannabis (33%) (Facy 1993).

Epidemiological studies in drivers have also been led. A multicenter study led in 3147 drivers involved in car accidents included a detection of BZD in the blood (immunoenzymatic). This study included a control group of drivers involved in car accidents but estimated as non responsible by the police, leaving aside an eventual liability related to alcohol (Lagier 1990, BZD Driving Collaborative Group, 1993). This study confirmed the notable average of drivers (8%) positive for BZD, average slightly lower than in a previous study (Girre 1988) however, this study did not show a difference (upon a base of relative risk of 2), between the group of responsible and not responsible drivers. But it shown the role, in accidents, of the association of alcohol an BZD. Moreover, a team involved in this study has led a more complete detection of
BZD, and the difference between the 2 groups was more significant (Arditti 1993).

At least, detections of cannabis have been led in a group representative of those drivers (Schermann 1993). Among 2938 blood analysis, 194 (6.6%) were positive for THC. 36% were 2 wheel vehicles. The accident led to an hospitalisation in 63% of cases, (involving a more important score of injury, as for alcohol related accidents). If we consider as positive a blood alcohol level over 0.5g/l, the average of drivers responsible in the accidents are shown in fig 1.

<table>
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<th>Average of drivers responsible</th>
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<td>No drugs</td>
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<td>55%</td>
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If we consider the drivers responsible in accidents, 60% are THC - and BZD - and are under 0.50 g/l, 40 % are positive for one or more substances, 27% are over 0.50g/l, 7% are THC +, 9% are BZD +. Drivers using cannabis do not appear very different from other drivers, reflecting a common use of this drug in diverse social categories. However, some characteristics are significant and suggest a specific group of young drivers with work problems, social problems and whose accident led to an hospitalization. After this study, the use of cannabis appears still rare in drivers, compared to alcohol, but numerous enough, in absolute values, to involve a specific attention.

Thought

Despite of some studies, the french context is characterized by a lack of long term action and of epidemiological researchs in this field, even if other available datas and studies led in other countries indicate a possible danger and a lack of specific regulations concerning medicinal drugs and above all illicit drugs. The difficulties of detection and measurement of numerous drugs able to impairs driving are an obstacle for the development of a systematic screening in drivers involved in accidents and we need blood or urine samples to carry reliable studies. It appears necessary to think about selective measures which implementation should be acceptable for drivers and compatible with the work burden of police. To screen and to measure numerous drugs in all drivers involved in accidents could involve a cost out of proportion with the expected results. In the same way to raise light drugs and hard drugs or addiction disease and addiction
offence are reducing approaches. A drug with a slight action on behavior but very used can be more related to accidents, than a drug with so important effects that it will be rarely used on the road.

Moreover, we must take into account the european context. Following an order (91/439) of july 1st 1996 (CEE, 1991), consumption of psychoactive drugs, susceptible of impairing driving, in relation with addiction or with quantities used must lead to refuse or regrant the driving licence.

**Concerning medicinal drugs used in “normal” therapies**: the lack of knowledge related to the risk of their use incites public policies to limit their action in the development of precaution in prescription, especially for the first use of the drug.

**Concerning medicinal drugs and industrial substances misused**, the situation is the same as for illicit drugs and their screening must be implemented in the general system of detection of drugs other than alcohol.

**Concerning illicit drugs**: they appear as able to impair driving but the main problem rests in the development of screening methods in real time with reliable and adapted tools. The lack of national datas indicating the frequency of risk exposure related to drug driving and the relative importance of the different drugs used actually limits our possibilities of categorization. However, the actual datas, despite of their imprecision, show a frequent use of cannabis. It concerns a population of several millions of people. Other illicit drugs are used by several thousands of people. But the number of psychoactive drug related accidents depends of the population exposed to the risk (number of kilometers under the influence), and depends also of the increase of the risk related to the distance. The combination of those two variables for each drug is not yet established. By an exemple, we cannot say if numerous cannabis users are more involved in accidents than the less numerous users of cocaine, amphetamine or heroine. We should adopt a practical attitude based upon the evaluation of the number of accidents in which one of the drivers was under the influence of one or several drugs.

**Propositions (Official report, 1996)**

- **Concerning medical treatments**:
  - improvement of clinical studies with specific tests (driving laboratory)
  - warning system with a specific logo on the boxes of medicinal drugs
  - to lead new epidemiological studies, multicenter in a national context
- Concerning misused medicinal drugs and industrial substances:
  - to integrate their screening in the general system of detection of illicit drugs

- Concerning illicit drugs:
  - to reduce the duration of the approach led during more than 20 years for alcohol by reducing it to two steps with the development of the knowledge of the French situation before implementing preventive controls (which will have a double interest in this case, with a dissuasion and a creation of control groups without accidents). The saliva testing should be very convenient if their validity can be confirmed. The procedures usable are close to those already used, in occupational medicine, for airways and railways employers. Their are also close to doping control.

  - to change driving regulations across a legislative way by organising the screening in drivers, of illicit or misused drugs impairing driving. The list of drugs, the technical requirement and, for each drug, the significant levels should be defined by regulations in an open list.

  - to direct, in some cases, analysis by clinical or police recording (specific changes in behavior, drug seizure, empty boxes found in the car ...)

  - to direct screening in injury accidents or severe offences to driving regulation in the following circumstances and with the following procedures:
    - in case of abnormal behavior out of proportion with the results of alcohol detection, to carry a screening with blood or urine, always followed by a laboratory confirmation
    - if clinical tests cannot be led (unconscious), to screen illicit or misused drugs in the blood (like for alcohol) or in urines.

Basically: coordination of screening procedure of psychoactive drugs, illicit or misused with alcohol detection procedure.

- If the driver involved in an accident is unable to use an ethylotest (injured or dead) a blood sample or an urine sample is taken in the medicinal unit which controls the blood for alcohol detection.

- If the driver, involved in an accident or in a driving regulation offence leading to detection of alcohol, as been able to use an ethylotest and if the result is positive, 2 cases can happen, depending of the police equipment:
  - if they have, at their disposal, an ethylometer, a urine sample is collected by the police in case of troubles of behavior suspected of not being only related to alcohol;
- if they have no ethylometer, the collection of biological samples is led in the medical unit where the blood sample for alcohol detection has been detected.

- If the alcohol detection is negative (under the legal limit) and if the driver's behavior involved in the accident or in the driving regulation offence appears abnormal to the police, a practitioner will carry a medical assessment and will collect a biological sample (blood or urine) for the drug detection.

Moreover, it will be necessary

- to control the regranting of the licence and to organize the orientation in a therapy for addictions other than alcohol;
- to imput a control of quality to guarantee the equity and the reliability of the device.

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Rôle des tranquillisants et hypnotiques de type benzodiazépines dans les accidents de la route:

**Livre blanc :**

Sécurité routière, drogues licites ou illicites et médicaments

Rapport au Premier Ministre. Comité de rédaction présidé par Georges Lagier, avec Jacques Le Chuiton, Sylvain Dally, Françoise Facy, Claude Got, Paul Lafargue, Michèle Rudler, Patrick Sansoy, Alain Tourre et la participation de Marc Rouchevrole.

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