Are oral PREPs valuable substitutes for smoking?

Among the potential reduced exposure products (PREPs) developed by the tobacco industry for smokers unwilling or unable to quit, some are combustible and intended to be smoked (Eclipse, etc.) but others are noncombustible and intended for oral administration (e.g. Camel Snus tobacco sachets and Ariva tobacco tablets). Similar snus is produced in Sweden but, so far, is not allowed in the rest of the European Union. The suppression of this marketing ban is heavily discussed in the European Community.

In the present study, the level of toxicant intake and abstinence symptom suppression was compared between own-brand cigarettes, no tobacco, Camel Snus and Ariva tablets.

Methods
Out of 75 contacted individuals, after refusals and exclusions, 29 entered the study, eight of whom were later excluded for noncompliance. The 21 healthy smokers included in the analysis reported smoking ≥15 cigarettes per day (CPD). Their average expired-air CO level and Fagerström test for nicotine dependence were ≥15 ppm and 5.8, respectively.

Participants were asked to allow the Ariva tablet containing 0.6 mg per g nicotine to dissolve in their mouth (over 15 min) without chewing or swallowing. Camel Snus sachets (containing 6.1 and 9.2 mg per g nicotine) were placed and held between lip and gum for 15 min. For ownbrand cigarettes, the average nicotine yields measured by the FDT method were 1.04, 14.25 and 14.25 mg, and the CO yield was 14.16 mg.

Participants completed four 5-day treatments (Monday–Friday), were allowed to smoke their own brand of cigarettes during the weekends and to go home after their daily visits to the programme. Every day, CO and urine nicotine were analysed to control compliance and measure toxicants, and HUGHES and HATSUKAMI [1], and TIFFANY and DROBES [2] questionnaires were administered.

Message
Current USA oral PREPs (Camel Snus sachets and Ariva tobacco tablets) limit CO intake, are less pleasant than cigarettes and do not control withdrawal symptoms effectively.

Competing interests
None declared.

Original article
Each participant received, as a 24-h supply, the same number of tablets or sachets as CPD that they reported previously.

Outcome measures
Expiratory CO, urine nicotine and NNAL-T (a metabolite of the carcinogen TNSA) were measured.

Results
The mean number of own-brand CPD, Ariva tablets and Camel Snus sachets used were 21.9, 12.3 and 11.7, respectively. Over the 5-day period (figure 1), with Ariva and Camel Snus, the CO decrease is significant and important; that of nicotine is significant but smaller on day 3 only for Ariva and Camel Snus, and on days 3 and 5 for no tobacco. A trend toward decreasing NNAL-T appears for Ariva in days 1-5 and, also, for the no tobacco condition but not for Camel Snus.

The mean scores of craving increase with time for all conditions except own-brand cigarettes (fig. 2a). The “pleasant” character of the products used is clearly and significantly weaker for both Ariva and Camel Snus than for own-brand cigarettes, with a larger decrease for Camel Snus (fig. 2b).

Editorial comment
The study results could be influenced by the high rates of attrition due to noncompliance under the no tobacco, Ariva and Camel Snus conditions. This, together with the response to the questionnaires, reflects the inability of Ariva and Camel Snus to control nicotine withdrawal. Furthermore, the perception of a less pleasant character for Ariva and Camel Snus can be paralleled with their lower than expected daily use. This could also explain, at least partly, the nicotine and NNAL-T decrease observed in comparison with own brand.

The reduced CO toxicity of oral PREPs is linked with the absence of combustion. The study does not allow definite conclusions concerning the intake reduction of the carcinogenic nitrosamines.

The evidence shown above does not, so far, allow the consideration of oral PREPs as a public health measure. Studies with larger numbers of participants and with a long follow-up are necessary. J. Prignot, Belgium

References