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## Survey of use of injected benzodiazepines among drug users in Britain

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Intravenous misuse of injected benzodiazepines began in Britain in the mid-1980s. At first the drugs commonly used were flurazepam and diazepam, but by the late 1980s, when the use of injected benzodiazepines had become widespread in several British cities, users were reported to be injecting mainly temazepam capsules.<sup>1</sup> In 1989 the manufacturers replaced liquid filled temazepam capsules with semisolid gel filled capsules<sup>2</sup> to prevent the drug from being injected. These capsules, however, are also being injected<sup>3</sup> and seem to lead to greater morbidity in individual users. Recently the use of triazolam<sup>4</sup> and nitrazepam has also been reported. We carried out a survey to determine the extent to which different formulations of benzodiazepines are injected.

### Subjects, methods, and results

Self completion questionnaires about drug misuse were returned by 208 subjects attending drug clinics in seven cities around Britain during March and April 1992. The mean age of the respondents was 31, and the male to female ratio was 2.1:1.0. The respondents were attending the clinics mainly because of their use of opiates (n=171), although virtually all (199) had also used heroin at some time. The questionnaire enabled us to examine the extent to which different benzodiazepines had been injected.

In all, 184 subjects had injected a drug at least once. Of the 186 who had used benzodiazepines, 103 had injected them. The proportion of subjects from each clinic who had taken oral benzodiazepines was

*Proportion of 208 users of benzodiazepines who had injected any formulation*

| Drug                     | No who had used drug | No (%) who had injected drug |
|--------------------------|----------------------|------------------------------|
| Temazepam:               |                      |                              |
| Capsules                 | 158                  | 93 (59)                      |
| Tablets                  | 104                  | 24 (23)                      |
| Syrup                    | 37                   | 7 (19)                       |
| Diazepam:                |                      |                              |
| Capsules                 | 53                   | 13 (25)                      |
| Tablets                  | 156                  | 35 (22)                      |
| Lorazepam tablets        | 73                   | 8 (11)                       |
| Triazolam tablets        | 39                   | 4 (10)                       |
| Nitrazepam:              |                      |                              |
| Capsules                 | 30                   | 3 (10)                       |
| Tablets                  | 109                  | 6 (6)                        |
| Chlordiazepoxide tablets | 65                   | 4 (6)                        |

fairly constant, but the proportion who had injected benzodiazepines ranged from a third to three quarters in one of the larger clinics.

Most subjects had used temazepam capsules (158) and diazepam tablets (156) (table). Other benzodiazepines used included nitrazepam tablets (109), temazepam tablets (104), lorazepam tablets (73), chlordiazepoxide tablets (65), and diazepam capsules (53); nitrazepam capsules and tablets, triazolam tablets, and temazepam syrup had been used less commonly. We found substantial differences in the proportions of subjects who had injected these benzodiazepine formulations, ranging from 6% for nitrazepam tablets and chlordiazepoxide tablets to 59% for temazepam capsules (table).

### Comment

Oral use of benzodiazepines was much more common among our subjects than among the general population, but the distribution of oral use across the range of benzodiazepines and their formulations was similar. Temazepam capsules, however, were the most commonly injected benzodiazepine. There has recently been debate as to whether the non-capsule formulations of temazepam are injected as commonly.<sup>5</sup> In our study the proportion of subjects who had injected temazepam tablets and syrup was substantially smaller than the proportion who had injected the capsules. Nevertheless, injection of temazepam tablets and syrup and diazepam tablets and capsules are still more common than injection of other widely used benzodiazepines such as nitrazepam and chlordiazepoxide (for which the prevalence of injection was a tenth that of temazepam capsules). Doctors who prescribe benzodiazepines to injecting drug users should consider the likelihood that a particular drug and formulation will be injected.

Would the problem be solved by removing temazepam from the picture? If temazepam capsules alone were removed, about half the drug users injecting benzodiazepines would still remain; if all three formulations of temazepam were removed, over a third of the users would remain, mostly injecting diazepam tablets and capsules. A focus on temazepam capsules therefore seems appropriate at present but may prove too narrow in the longer term.

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