Driving performance of psychiatric patients, before and during anxiolytic and antidepressant therapy

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RISK OF TRAFFIC ACCIDENT INJURY AFTER BENZODIAZEPINE USE

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The objective of this presentation will be to assess the risk of injuries due to traffic accidents after a first prescription for a benzodiazepine (BZD). Saskatchewan Health supplied study populations of 78,000 adults who received BZD hypnotics (triazolam and flurazepam), 148,000 who received BZD anxiolytics (lorazepam, diazepam, and oxazepam) and 98,000 unexposed controls. These populations were monitored for subsequent hospitalizations for traffic accident injury. Persons taking BZD hypnotics showed an odds ration (OR) of 3.9 (1.9–8.3), while those taking BZD anxiolytics showed an OR of 2.5 (1.2–5.2) for hospitalization due to traffic accidents within four weeks of filling the prescription for BZD. Within two weeks of prescription, the OR rises to 6.5 (1.9–22.4) for hypnotics and 5.6 (1.7–18.4) for anxiolytics. Within the first week, the OR are even higher at 9.1 and 13.5, respectively. Each of the five individual BZD showed a similar pattern, with oxazepam showing the lowest curve. The highest age/sex risk groups were young males. Concomitant use of antidepressants, antipsychotics, or anticonvulsants showed no statistically significant additional risk for injury. From a public health viewpoint, the high OR for traffic accident injury after BZD use are of concern, and action for prevention is advisable.

ROLE OF BENZODIAZEPINE COMEDICATION IN DETERMINING DEPRESSED PATIENTS DRIVING PERFORMANCE DURING ANTIDEPRESSANT THERAPY: RESULTS OF A POST-HOC ANALYSIS


Outpatients suffering from Major Depression (DSM III-R; HAM-D scores > 17) were tested for driving ability twice on separate days in a standardized on-the-road test and then randomly assigned to two groups for double-blind treatment with fluoxetine 20 mg gd (N = 19) and moclobemide 150 mg b.i.d. (N = 21) lasting 6 weeks. Clinical assessments were repeated after 1, 2, 3 and 6 weeks using HAM-D, MADRS and CGI. Doses were doubled after 3 weeks for patients who failed to improve. Driving assessments were repeated after 1, 3 and 6 weeks. The test involved operating an instrumented vehicle over a 100 km primary highway circuit while attempting to maintain a constant speed (95 km/h) and steady lateral position between boundaries of the slower traffic lane. The primary outcome variable was standard deviation of lateral position (SDLP), an index of road tracking error or allowed “weaving”. There were no significant differences in mean improvements on clinical rating scales or side-effect frequencies between groups. Patients’ driving performances were normal and reliable (r = 0.87) during tests before treatment. Most patients’ driving performances changed little but some in both groups showed a progressive deterioration. A post hoc multiple regression analysis was applied to identify the responsible factor(s). Among hypotheses tested was that the benzodiazepine (BZD) comedication, which was permitted under the protocol for 31 patients who had been chronic users, interacted with the antidepressants to impair performance. This was confirmed by a significant (p < 0.03) relationship. Patients whose driving deteriorated used BZDs that are metabolized by a cytochrome P450 isozyme subject to inhibition by their particular antidepressant. Those using other BZDs, or none, drove consistently well. Moreover, this relationship was independent of the BZD doses (d.d.d. units). The implication for future confirmation is that neither fluoxetine nor moclobemide impair driving performance, except when used with metabolically incompatible BZD comedication.