Driving and Diabetes

One piece of the picture

Cox et al. (1) alert us to an important issue for patients with diabetes, their families, and the motoring public. The data from this multicenter international study suggest that patients with type 1 diabetes are at what is potentially another order of risk for adverse events behind the wheel in comparison with type 2 diabetic patients and all patient spouses. It is noteworthy that there is an average 14-year age difference between the type 1 and type 2 diabetic groups, with the latter group more clearly middle-aged and subject to the decrements in vision (especially night vision), multitasking, and reaction time that characterize this time of life. This age difference could be seen as making the reported group differences on the survey all that more salient, or the difference might be a further confounding factor in interpreting this research. Statistical corrections cannot sufficiently dismiss the difference as an important issue (2,3).

The data here are consistent with what one might expect in terms of the essential feature of acute hypoglycemia that really defines the differences between the two types of diabetes in terms of driving risk. However, even this expectancy confirmation should be taken with caution, given that this is a study of self-reports conducted in the context of specialty medical care visits. It is also remarkable in that no subject approached for the study refused to participate. While an anonymous research participation was offered here, it is not clear that this uniform level of involvement could be reproduced in another set of clinics. Patient sensitivity to the use and disclosure of any information in the context of medical settings is becoming greater, while measures to really recruit an informed and consented research sample of patients are not only making studies more compliant with institutional review board regulations, but also more difficult.

The data reported here are self-report information dependent on a retrospective recall of 2 years. This is particularly important in automobile crashes, traffic citations, and situations where patients are having safety-threatening stupor or are requiring assistance are at once memorable and anxiety-provoking events. Attribution of blame or failure in accidents has not only clinical but also legal dimensions. Motor vehicle accidents are subject to all manners of selective remembrance and influences that have been long documented in the literature (4) and aptly mentioned by the authors as a limiting influence in the study.

The questions asked in this survey regarding accidents or violations carry no attributional information on the relation between the disease and the traffic event. As the investigators have suggested in previous work (5) that type 1 diabetic patients do not tend to assess their glycemic status well in relation to their driving safety, there is little reason to regard the present survey questions as being free of this source of variance. Also, as there were no questions asked in the present study that could serve to shed any light on response bias or fidelity of responses, there is no way to construe the results of the present survey as more than face-valid.

Information regarding the relative safety of commercial and noncommercial drivers who have diabetes of any type must come from many sources in order to have value. Each of the kinds of data mentioned in this report has its value and its limitations. Driving simulator studies do not translate well into individual clinical decisions regarding driving status across a variety of disease conditions, although as a general rule patients with diseases having episodic effects on consciousness or cognition via metabolic or neurological mechanisms simply show higher rates of errors in simulators than nonpatients (e.g., 6). Laboratory tests of cognitive and perceptual functioning generally do not add much to the driving safety picture, since driving accidents happen while overlearned skills are being used for extended periods while driving, with the reaction to the rare traffic event usually overdetermined (7). Clinical measures of neuropsychological function are simply not designed to predict these circumstances any better than driving simulators. Finally, truly useful driving studies of epidemiologically selected cohorts of patients with diabetes would be a large-scale undertaking with little likelihood for generalizable results unless funded and executed on a national collaborative or multicenter basis.

Important issues come to the forefront when the practical impacts of disease contribute to an adverse view of the public safety of those having the disease and a need to drive. Diabetes is an important and widespread exemplar of this more general problem in medical care for those who have chronic disease management issues in the context of advancing age. We, as the medical research community, have not yet begun the essential work of fashioning a framework of fairness to competently set reasonable standards for traffic safety across disease conditions. Across nations and jurisdictions, casual and professional diabetic drivers are faced with a patchwork of restrictions whose solid, scientific evidence-based derivation and fairness are less than apparent in some instances. We will not even touch on the issues affecting rule making for diabetic patients in aviation, marine, railroad, and hazardous materials handling realms, but the competing interests are no less complex.

Information from any single mode of inquiry (questionnaire, performance testing, simulation, and epidemiological investigation) is likely to be flawed as a probative input to policy making. Cox et al. wisely counsel that information from this study should not be used to fashion adverse rules for diabetic drivers, as they did in previous work (5). However, this is a message that may have a paradoxically negative impact in a policy-making environment that does not respond to an organized accretion of sound scientific intelligence, such as this study, as a departure point for policy making. Instead
the public dialogue process seems to rely on retrospective and after-the-fact “hear- 
ings” that are driven by high-profile mo-
tor vehicle tragedies that happen to involve patients with diseases that can ad-
versely affect consciousness or cognition. The latest National Transportation Safety 
Board Public Hearing on Medical Over-
sight of Non-Commercial Drivers (3 March 2003) is typical and includes as its 
rationale for its convening an injury acci-
dent putatively involving a 61-year-old 
driver with diabetes (http://www.ntsb. 
gov/Pressrel/2003/030303.htm). While 
the witnesses and consultants of such 
hearings are distinguished and able, rule-
making or policy formation linked in a 
fault-finding aftermath of painful events is 
not wise (http://www.ntsb.gov/events/
2003/med_noncomm/presentation_files/
frame.htm).

Professional and advocacy organiza-
tions across a variety of disciplines and 
diseases should seize the agenda on traffic 
safety and continue to attempt to step out 
of a blame-clouded “reactive” mode to 
craft an overarching policy on medical 
conditions and driving that balances the 
motoring needs of the responsible indi-
vidual controlling a disease with the pub-
lic’s safety. Imputing deficit or risk for any 
condition based on good research must be 
placed in such a context.

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