INTRODUCTION

In the Netherlands clear driving regulations exist for patients with epilepsy. These rules have been updated recently. Disorders involving paroxismal attacks of sleepiness during daytime, in particular narcolepsy, have been brought under these rules. Doctors dealing with patients with excessive daytime sleepiness should be aware of the problems that can arise during driving and have to warn their patients. In our center for sleep and wake disorders this is a standard procedure. Nevertheless follow-up visits have shown that only few patients effectively changed their driving habits.

The aim of the present study was to get insight in actual driving of such patients and the influence of diagnosis, therapy and advices given by our staff.

PATIENTS AND METHODS

All patients seen in our center for sleep and wake disorders in the last four years who met the inclusion criteria (table 1) received a questionnaire on driving, actual excessive daytime sleepiness and the influence of diagnosis and therapy on their driving behaviour.

Table 1 Patients

<table>
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<th>Inclusion of patients with</th>
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<td>complaints about daytime sleepiness.</td>
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<td>during 48 hrs of continuous polygraphy (outpatient based) at least:</td>
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<td>* &gt; 2 naps of 10 min. or more / day</td>
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<tr>
<td>and/or</td>
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<td>* 1 nap of 60 min. or more / day</td>
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N= 92 : 71 M, 21 F
Age : range 18-77, median 54 yrs.
Diagnosis : 26 narcolepsy, 61 OSAS, 5 PMLS

Excessive daytime sleepiness was scored using the Epworth sleepiness scale and questions from the Sleep Diagnostic Questionnaire (2), see table 2.
Table 2 Questions

In addition to the Dutch version of Epworth Sleepiness Scale the following statements were given for consideration:

1) I have slept for several days at a time, or at least I have been overwhelmingly sleepy for that long.
2) Now, I am very sleepy during the day and I struggle to stay awake.
3) In the past 6 months, I have fallen asleep accidentally in some of these situations: eating a meal, talking on the phone, talking to someone, riding in a bus or car, watching TV, at the theater, reading a book, at a lecture.
4) I now have trouble doing my job because of sleepiness or fatigue.
5) I often have to let someone else drive the car because I am too sleepy to do it.

The patient was asked to give the answers on a scale: 1 (never / strongly disagree) to 5 (always / agree strongly).

The statements were taken from the Sleep Disorders Questionnaire (ref.2).

The answers to the latter were compared to those to the same questions given by the patients during their first visit to our center. The interval between diagnosis and present study was at least 0.5 years (range 0.5 - 4 years, median 1.5 years).

RESULTS

Ninety-two patients (59% of those approached) replied. For demographic details and diagnosis see table 1. Eighteen patients had no driving licence or had no car. From the remaining 74 patients 3 quit driving due to excessive daytime sleepiness and because of the information they received on possible consequences of driving in their condition. The other 71 patients continued driving, some of them even large distances (1000-140,000 km/year, median 13,000 km/year). Eight patients were professionals such as lorry-, coach- and taxi drivers.

The questionnaire revealed that during the preceding 6 months 6 patients regularly drove motorbikes, 67 patients drove private cars, 11 lorries and 2 were professional drivers of coaches. The Epworth sleepiness scale ranged from 0 to 19, median 4. The scores from the questions asked in the Sleep Diagnostic Questionnaire could theoretically range from 5 to 25 (see table 2). During the diagnostic process in which the patients were confronted for the first time with this questionnaire this range of scores was actually reached (median 15). In the present survey the score on the questionnaire varied from 5 to 20 (median 8).

The effect on driving of diagnosis and therapy and the information for the patients was only limited. More than half of the patients reported that there had been no change in driving behaviour at all; some patients had even driven more than before diagnosis. For details see table 3.
Table 3 Influence on driving

N= 74 drove a car before diagnosis.

<table>
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<tr>
<th>Influence</th>
<th>after diagnosis</th>
<th>after diagnosis + therapy</th>
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<tbody>
<tr>
<td>Driving</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- more</td>
<td>7</td>
<td>10</td>
</tr>
<tr>
<td>- same</td>
<td>49</td>
<td>48</td>
</tr>
<tr>
<td>- less, but still driving</td>
<td>15</td>
<td>13</td>
</tr>
<tr>
<td>- stopped</td>
<td>3</td>
<td>3</td>
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</table>

Eleven patients reported that in the interval between diagnosis and answering the final questionnaire dangerous situations arose due to excessive sleepiness during driving (four once, seven 2-5 times in that period).

CONCLUSION AND RECOMMENDATION

Patients with excessive daytime sleepiness recognise the dangers which may occur whilst driving a car. Although they are aware of the (legal) problems which may arise, only few patients tend to quit or cut down their driving. This behaviour can be explained by the pivotal position that driving occupies in our everyday social life. This problem in which the interests of patients and society do not concur cannot be solved by legal rules.

A differentiated approach for each individual patient is called for. Sleep experts should take on a guiding role in this process. Unfortunately, so far no such guidelines exist. Research in this respect is urgently needed.

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REFERENCES