

Insomnia, hypnotics and driving

Submission date 21/04/2010	Recruitment status No longer recruiting	☐ Prospectively registered
Registration date 10/06/2010	Overall study status Completed	☐ Protocol
Last Edited 19/09/2019	Condition category Nervous System Diseases	☐ Statistical analysis plan
		☒ Results
		☐ Individual participant data

Plain English summary of protocol

Not provided at time of registration

Contact information

Type(s)

Scientific

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Additional identifiers

Protocol serial number

EPU-P31

Study information

Scientific Title

Effects of insomnia and chronic use of hypnotics on driving performance: a parallel group comparison trial

Study objectives

The present study aims to determine whether driving performance of chronic users of hypnotics and unmedicated insomnia patients differs from normal sleepers of the same age.

Ethics approval required

Old ethics approval format

Ethics approval(s)

Medical Ethics Committee of Maastricht University and University Hospital of Maastricht approved on the 20th June 2007 (ref: MEC 07-3-040)

Primary study design

Interventional

Study design

3 x 2 parallel group comparison trial

Study type(s)

Quality of life

Health condition(s) or problem(s) studied

Insomnia

Interventions

3 x 2 parallel group design with three groups (chronic users, unmedicated insomnia patients, controls) and two within subject conditions (habituation and baseline).

Subjects were individually trained to perform the laboratory tests during two sessions of approximately 1.5 hours within 10 days before their first night. After training the subjects underwent two nights of sleep evaluation. The first night was a habituation and practice condition to familiarize subjects with the sleeping facilities and polysomnographic and test procedures. The second night was considered as the actual test condition.

A test condition started in the evening of Day 1, when the subjects arrived at the site at approximately 19:00 hours, and lasted until Day 2, when they were discharged at approximately 11:45 hours. On arrival at the sleeping facility, subjects rated their subjective feelings and subjective sleepiness. From 19:30 hours until 20:30 hours they performed the first session of laboratory tests, comprising the Word Learning Test immediate and first delayed recall, the Critical Tracking Task, the Divided Attention Task, the Psychomotor Vigilance Task, the Stop Signal Task, and the Digit Span forward and backward. Hereafter, electrodes for polysomnographic recording were attached.

Subjects retired to bed at 23:30 hours. Immediately preceding retiring, subjects in the chronic users group ingested their own prescribed hypnotic, whereas subjects in the unmedicated insomniacs group and controls did not ingest medication. Subjects were awakened at 07:30 hours and after arising a light standardized breakfast was served. At 08:00 hours subjects evaluated sleep quality and duration, and feelings of daytime sleepiness and alertness. Subsequently, they started the second session of laboratory tests, comprising the Word Learning Test second delayed recall and recognition, the Critical Tracking Task, the Divided Attention Task, the Psychomotor Vigilance Task, and the Digit Span forward and backward. At 9:00 hours blood samples were taken from the chronic users to determine serum concentrations of hypnotics before driving. Thereafter subjects were transported to the Highway Driving Test which they performed between 09:30 and 10:30 hours. Upon completion subjects rated the

mental effort it took to perform this driving test, and subsequently they conducted the Car-Following Test. Upon completion of this test subjects returned to the testing facilities for removal of the electrodes and were discharged.

Intervention Type

Other

Phase

Not Applicable

Primary outcome(s)

Standard Deviation of Lateral Position (SDLP in cm) in the highway driving test

Key secondary outcome(s)

1. Time to speed adaptation (in sec) and brake reaction time (in msec) in the car following test
2. Cognitive and psychomotor tests

Completion date

31/12/2008

Eligibility**Key inclusion criteria**

1. Healthy (except for patients complaints of insomnia)
2. Aged 55 year of older, either sex
3. Possession of a valid drivers license
4. Average annual driving experience of 3000 km per year over the last three years

Participant type(s)

Patient

Healthy volunteers allowed

No

Age group

Adult

Sex

All

Total final enrolment

63

Key exclusion criteria

1. Abuse of alcohol, nicotine and caffeine
2. Use of medication that might affect driving performance (except hypnotics)
3. For patients:
 - 3.1. Sleep-related breathing disorders
 - 3.2. Circadian rhythm sleep disorders
 - 3.3. Sleep related movement disorders

Date of first enrolment

01/06/2007

Date of final enrolment

31/12/2008

Locations

Countries of recruitment

Netherlands

Study participating centre

Universiteitssingel 40

Maastricht

Netherlands

6229ER

Sponsor information

Organisation

Federal Highway Research Institute (Bundesanstalt für Straßenwesen) (Germany)

ROR

<https://ror.org/046nzaj59>

Funder(s)

Funder type

Government

Funder Name

European Union (EU) (Belgium) - Sixth Framework Programme (FP6): Driving Under the Influence of Drug, Alcohol and Medicine (DRUID)

Results and Publications

Individual participant data (IPD) sharing plan

IPD sharing plan summary

Not provided at time of registration

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Results article	results	01/07/2014	19/09/2019	Yes	No