



REVIEW ARTICLE

Driving ability after a stroke: Evaluation and recovery[☆]

M. Murie-Fernandez^{a,*}, S. Iturralde^a, M. Cenoz^a, M. Casado^a, R. Teasell^b

^a Unidad de Neurorrehabilitación, Departamento de Neurología, Clínica Universidad de Navarra, Pamplona, Navarra, Spain

^b Departamento de Rehabilitación y Medicina Física, St Joseph's Health Care London, Parkwood Hospital, Universidad de Western Ontario, London, Ontario, Canada

Received 20 May 2012; accepted 28 May 2012

Available online 2 March 2014

KEYWORDS

Stroke;
Driving licence;
Hemiplegia;
Neurorehabilitation;
Social reintegration

Abstract

Introduction: The ability to drive after a stroke has been recognised by many authors as a sign of independence and it is closely associated with proper social reintegration. However, it remains unclear how the driving ability of an individual who has suffered a stroke should be evaluated, and by whom. Neurorehabilitation can produce improvements in patients who have suffered a stroke, and patients may therefore be able to resume driving at the end of an appropriate neurorehabilitation programme.

The aim of this article is to present a literature review in order to highlight current evidence regarding methods for assessing driving ability and therapeutic methods applied in order to recover a patient's ability to drive.

Development: A literature search was performed in different databases for the period between 1993 and 2011. Studies were analysed individually based on methods for assessing driving ability and neurorehabilitation measures.

Conclusions: If there are any doubts regarding stroke patients' ability to drive, patients should be assessed appropriately. The proper way to assess these patients according to the literature is by employing a multidisciplinary evaluation to determine who is able to take a road test. Neurorehabilitation exercises currently in use may be able to improve driving ability in stroke patients.

© 2012 Sociedad Española de Neurología. Published by Elsevier España, S.L. All rights reserved.

PALABRAS CLAVE

Ictus;
Carnet de conducir;
Hemiplejía;
Neurorrehabilitación;
Reintegración social

Capacidad de conducción tras un ictus: evaluación y recuperación

Resumen

Introducción: La habilidad para conducir después de un ictus ha sido reconocida por muchos autores como un indicador de independencia y se asocia de forma significativa con una reintegración social adecuada. Sin embargo, no queda claro quién y como debe valorarse la capacidad de conducción de un individuo que ha sufrido un ictus. El proceso Neurorrehabilitador es capaz

[☆] Please cite this article as: Murie-Fernandez M, Iturralde S, Cenoz M, Casado M, Teasell R. Capacidad de conducción tras un ictus: evaluación y recuperación. Neurología. 2014;29:161–167.

* Corresponding author.

E-mail address: manumurie@gmail.com (M. Murie-Fernandez).

de obtener mejorías en los pacientes que han sufrido un ictus y por lo tanto un paciente puede volver a estar capacitado para conducir tras un tratamiento Neurorrehabilitador adecuado.

El objetivo de este artículo es realizar una revisión de la literatura, con el fin de poner de manifiesto la evidencia actual respecto a los métodos de evaluación de la capacidad para conducir y de aquellas intervenciones llevadas a cabo para recuperar la capacidad de conducir. *Desarrollo:* Se llevó a cabo una búsqueda de la literatura de diferentes bases de datos entre los años 1993 y 2011. Se analizaron de forma individual los estudios realizados en base a los métodos de evaluación de la capacidad de conducir y de intervención neurorrehabilitadora.

Conclusiones: Se debe valorar de forma apropiada a todos los pacientes con un ictus en los que existen dudas sobre su capacidad de conducir. La forma adecuada de valorar estos pacientes según la literatura es mediante una valoración multidisciplinar que determine quien esta capacitado para someterse a un test en carretera. Los ejercicios de Neurorrehabilitación existentes pueden mejorar la capacidad de conducir de los pacientes con ictus.

© 2012 Sociedad Española de Neurología. Publicado por Elsevier España, S.L. Todos los derechos reservados.

Introduction

Stroke is a catastrophic illness. In developed countries, it is listed as one of the main causes of death and the leading cause of disability. In addition to its considerable repercussions on patients and their families,¹ it also has an elevated social impact.² Direct and indirect costs of stroke account for at least 3% of all healthcare costs in a developed country.³ Future projections are not very encouraging. The ageing population is associated with a higher incidence of stroke, while advances in the understanding of pathophysiology in brain damage and the development of new diagnostic and therapeutic techniques are associated with rising stroke prevalence. Given this panorama, neurorehabilitation units are crucial for minimising stroke sequelae.⁴

Strokes have a negative effect on patients' social activities and quality of life.⁵ The ability to drive after a stroke has been recognised by many authors as an indicator of independence, and it demonstrates a strong association with good social reintegration. In particular, it is significantly associated with appropriate social reintegration at one year after stroke.⁶ Nevertheless, it remains unclear how ability to drive should be evaluated in a stroke patient, and who should be entrusted with the task. The difficulty resides in the complexity of the act of driving, which requires full function of multiple systems that may be damaged totally or partially, and permanently or temporarily, in stroke patients. Some of the most important systems are visual function, motor function, and cognitive ability (including executive functions, response time, praxis and knowledge, decision-making, attention, planning, etc.).

Patients who have experienced stroke have greater deficiencies when driving than stroke-free subjects.⁷ Stroke patients older than 65 years have a higher risk of being involved in accidents while driving, regardless of the medication they take, compared to patients with other chronic diseases (cancer, diabetes, cognitive impairment, glaucoma, other).⁸ This being the case, it is of vital importance to determine which individuals with a history of stroke should not drive, especially when it has been shown that stroke patients and their families tend to overestimate their driving ability.⁹

In practice, many patients who have experienced stroke resume driving without medical advice or evaluation,¹⁰

while others choose not to drive again for safety reasons.^{5,11,12}

The purpose of this article is to present a literature review with current evidence on methods for evaluating driving ability and the interventions that have been performed so that patients can recover their abilities.

Procedure

Using a variety of databases (CINAHL, EMBASE, MEDLINE and PSYCHINFO), we performed a literature search for the years 1980–2011. We selected published studies on assessing driving ability in stroke patients, or studies analysing interventions designed to improve patients' driving abilities. Those studies not detected by our original literature search, but cited in review articles, meta-analyses, or systematic reviews, were also included.

Evaluating driving ability

In some countries, doctors are responsible for assessing a patient's ability to drive after a stroke, but few clinical guidelines indicate how this ability should be measured. [Table 1](#) provides a summary of studies examining how driving ability is evaluated.

In 1993, Lincoln et al.²⁸ showed that general practitioners' interpretations of results from cognitive tests allowed them to predict the result of a road test in only 56% of the patient sample.²⁸ In contrast, a multidisciplinary team made up of a neurologist and neuropsychologist was able to predict safe driving ability in 75% of the cases.⁷

The road test seems to be the most valid measurement, but this test remains subjective; there are no standard guidelines for what the test is intended to measure. Akinwuntan et al.²⁰ used a 13-item list to evaluate this test. These authors concluded that the 13-item list was reliable and that results were good. Furthermore, results from non-road tests in the SDSA (Stroke Drivers' Screening Assessment) coincided with results on road tests in 78.9% of the sample.²⁰

Some have suggested that a combination of non-road tests (neurological and neuropsychological evaluation) and a

Download English Version:

<https://daneshyari.com/en/article/3077462>

Download Persian Version:

<https://daneshyari.com/article/3077462>

[Daneshyari.com](https://daneshyari.com)