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REVIEW ARTICLE

Ethical considerations in presymptomatic diagnosis of autosomal dominant spinocerebellar ataxias☆,☆☆

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Abstract
Introduction: Information on achieving presymptomatic diagnosis of spinocerebellar ataxia (SCA) is limited. The advent of molecular diagnosis makes it possible to identify the carriers of different diseases and has also introduced the prospect of detecting diseases even before their onset. This has drawn attention to the ethical implications that must be considered in these subjects with a view to preserving their physical and psychological well-being.
Development: SCA is composed of a group of neurodegenerative disorders with autosomal dominant inheritance. Only a few publications have described the genetic counselling processes and guidelines to be followed during the process of presymptomatic diagnosis (PSD). The size of the multidisciplinary teams, their areas of expertise, and the number of counselling sessions are different for each of the studies analysed here. However, the basis of presymptomatic diagnosis originates in common guidelines to which members of our team have contributed recently.
Conclusion: Presymptomatic diagnosis should be performed according to guidelines that safeguard the subjects' welfare. The diagnostic process is only recommended for patients over 18 years old with symptoms suggesting SCA, and a minimum risk of 50%. Genetic counselling programmes must be available in all centres that offer presymptomatic diagnosis of SCA.

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PALABRAS CLAVE
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Consideraciones éticas en el diagnóstico presintomático de ataxias espinocerebelosas autosómico dominantes

Resumen
Introducción: Existe información limitada de la realización de diagnóstico presintomático en ataxias espinocerebelosas (SCA) autosómicas dominantes. La llegada del diagnóstico molecular, además de brindar la posibilidad de realizar identificación en pacientes portadores de distintas enfermedades, permitió también la posibilidad de detectar enfermedades incluso antes de su presentación. Esto atrajo la atención sobre las implicaciones éticas que deberían ser consideradas en estos sujetos, con la finalidad de salvaguardar su bienestar físico y psicológico.
Desarrollo: La SCA está compuesta por un grupo de trastornos neurodegenerativos con patrón de herencia autosómico dominante. Existen pocas publicaciones que describen el proceso de asesoramiento y los lineamientos considerados durante el proceso de diagnóstico presintomático. El número de integrantes de los equipos multidisciplinarios, sus áreas de especialidad y número de sesiones durante el asesoramiento es variable en cada uno de los trabajos analizados. Sin embargo, las bases para su realización tienen origen en documentos comunes, en los cuales algunos de los autores han participado en fechas más recientes.
Conclusiones: El diagnóstico presintomático debe ser realizado bajo lineamientos que salvaguarden el bienestar de los sujetos. Sería recomendable que el diagnóstico de SCA sea realizado solo a pacientes con clínica sugestiva, mayores de 18 años y con un riesgo mínimo del 50%. Deben estar disponibles esquemas de asesoramiento genético en todos aquellos centros que pretenden realizar diagnóstico de SCA antes de la presentación de síntomas.

Introduction

With the introduction of molecular diagnosis and such programmes as the Human Genome Project, scientists expected great advances in different areas of knowledge, as well as the possibility of improving health. Primary objectives of medical genetics were clear: diagnosis, treatment, and prevention of genetic disorders.[1] As a result, molecular diagnosis of such genetic disorders as Huntington disease (HD), Alzheimer disease, spinocerebellar ataxias (SCA), familial amyloid polyneuropathy, and other neurodegenerative disorders, has been possible for more than 30 years. This offered the opportunity to deliver presymptomatic diagnoses (PSD) and predictive diagnoses of some neurodegenerative diseases before any signs and symptoms are apparent.[2,3] The ethical considerations of this possibility soon attracted attention, based on the controversy surrounding the benefits of ascertaining a person's susceptibility to a disease for which there is no curative treatment and whose clinical outcome cannot be modified.[4,5] In the specific case of SCA, the European Molecular Genetics Quality Network (EMQN) drafted guidelines in 2010 describing requirements for performing presymptomatic analyses in accredited laboratories with the aim of providing a quality guarantee.[6] However, there is no standard providing guidance on presymptomatic diagnosis in subjects at risk for presenting a disease. Currently, PSD is conducted according to general ethical guidelines and other guidelines issued for such diseases as HD.

Objective

The objective is to analyse the ethical considerations, genetic counselling procedures, and recommendations derived from studies of PSD in subjects at risk for SCA.

Development

Presymptomatic diagnosis is defined as the process of identifying healthy subjects who will develop a genetic disorder if they live long enough.[7] It was first used in 1983 to identify subjects at risk of developing HD.[8] Based on its origin and inheritance pattern, SCA was included in the group of neurodegenerative diseases that can be diagnosed before patients present symptoms.[9]

Spinocerebellar ataxias

Spinocerebellar ataxias are a group of neurodegenerative disorders with an autosomal dominant inheritance pattern. Their symptoms are caused by dysfunction of the cerebellum and brainstem, and of their pathways and associated connections.[10,11] The incidence of SCA is estimated at 2 to 3 cases per 100 000 population.[12] Ruano et al.[13] performed a meta-analysis which determined a prevalence of 0 to 5.6 cases per 100 000 population for autosomal dominant