Dentatorubral-Pallidoluysian Atrophy (DRPLA)

Record Status
This is a bibliographic record of a published health technology assessment. No evaluation of the quality of this assessment has been made for the HTA database.

Citation
Dentatorubral-Pallidoluysian Atrophy (DRPLA) Lansdale: HAYES, Inc.. Genetic Testing Publication. 2011

Authors’ objectives
Dentatorubral-pallidoluysian atrophy (DRPLA; also known as Naito-Oyanagi disease, Haw River syndrome, or myoclonic choreoathetosis with epilepsy) is a hereditary neurodegenerative disease that is especially prevalent among individuals of Japanese origin. DRPLA, one of more than 25 forms of autosomal dominant cerebellar ataxia, is characterized by atrophy of the dentatorubral and pallidoluysian regions of the brain. It is associated with variable clinical phenotypes that include abnormal movements, intellectual deterioration, and psychiatric changes. The mean age at which DRPLA symptoms begin is at age 30, although they may present as early as infancy or as late as the sixth or seventh decade of life. Individuals with signs of DRPLA developing before age 20 typically exhibit ataxia (lack of coordination during voluntary muscle movement), myoclonus (involuntary twitching of the muscles), seizures, intellectual disability, and behavior changes. In patients with symptoms manifesting after age 20, the disease is more frequently characterized by ataxia; choreoathetosis (involuntary movements consisting of brief and irregular contractions [chorea] and writhing motions [athetosis]); psychiatric disturbances (including personality changes, hallucinations, and delusions); and dementia. However, these correlations are not absolute and there is phenotypic overlap between the juvenile and adult forms of the condition. In addition, DRPLA patients may experience additional neurological symptoms, such as tremor, dystonia (sustained muscle contractions), and dysarthria (problems with articulation), and magnetic resonance imaging (MRI) may reveal atrophy of the cerebrum, cerebellum, and brainstem. DRPLA is progressive and most patients require assistance with mobility in the later stages of disease. Furthermore, early death from respiratory failure or status epilepticus is possible. DRPLA is caused by expansion of a CAG trinucleotide repeat in the atrophin-1 (ATN1) gene located on chromosome 12 at band q13.31. This triplet repeat is located in a coding segment of the gene and is translated into a polyglutamine tract within the ATN1 protein. Affected individuals carry one normal allele (usually with up to 35 CAG repeats) and one allele with an expanded repeat (typically between 49 and 88 CAG trinucleotides). Neuropathological studies suggest that the expanded polyglutamine tract leads to the formation of intranuclear inclusions that are toxic to nerve cells. Like other CAG repeat disorders, DRPLA exhibits genetic anticipation—an increase in disease severity and an earlier age at onset with successive generations that results because of repeat expansion when transmitted from parent (especially father) to child.

Final publication URL
The report may be purchased from: http://www.hayesinc.com/hayes/crd/?crd=12794

Indexing Status
Subject indexing assigned by CRD

MeSH
Humans; Myoclonic Epilepsies, Progressive

Language Published
English

Country of organisation
United States

English summary
An English language summary is available.

**Address for correspondence**
HAYES, Inc., 157 S. Broad Street, Suite 200, Lansdale, PA 19446, USA. Tel: 215 855 0615; Fax: 215 855 5218 Email: hayesinfo@hayesinc.com

**AccessionNumber**
32011001450

**Date abstract record published**
26/10/2011