Cerebellum (2013) 12:596–599
DOI 10.1007/s12311-013-0460-4

LETTER TO THE EDITOR

Clinical Course of Two Italian Siblings with Ataxia-Telangiectasia-Like Disorder

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Published online: 23 February 2013

Abstract Ataxia-telangiectasia-like disorder (ATLD) due to mutations in the MRE11 gene is a very rare autosomal recessive disease, described so far in only 20 patients. Little is known about the onset of the first symptoms or the clinical course of the disease. The present report contributes to the diagnosis of ATLD and its prognosis at onset. We report 30 years of clinical and ophthalmic observations and the results of quantitative magnetic resonance (MR), MR spectroscopy (proton magnetic resonance spectroscopic imaging) and neuropsychological assessment in the first Italian siblings identified with ATLD. Although the disease had early onset and the clinical picture was initially severe, suggesting ataxia-telangiectasia, neurological impairment, ocular motor apraxia and neuropsychological tests showed very slow deterioration in adult age. The patients developed eye and head motor strategies to compensate ocular motor apraxia. MR measurements and MR spectroscopy disclosed widespread neuronal and axonal involvement. ATLD should be considered in patients with ocular apraxia and ataxia in infancy. The long follow-up provided insights into clinical outcome, with functional neuroimaging studies shedding light on the pathogenetic mechanisms of this rare disease.

Keywords Ataxia-telangiectasia-like disorder · ATLD · Ocular apraxia · Autosomal recessive ataxia · Mre11 mutation

Introduction

Among autosomal recessive cerebellar ataxias, ataxia-telangiectasia-like disorder (ATLD) has only been described in six patients in Europe [1, 2], in ten Saudi Arabians [3], in two Japanese [4] and in two Pakistanis [5]. The mutant gene, MRE11, encodes a protein with nuclease and DNA-binding activity involved in repair of DNA double-strand breaks [6]. We report clinical, ophthalmic, neuropsychological and neuroradiological findings over a period of 30 years in the only two Italian ATLD patients so far observed [2]. Our aim is to contribute data on this very rare condition.

Patients and Methods

The two siblings were born to unrelated parents. At 3 years of age, the elder son (patient 1) developed unsteadiness. On beginning school at 6 years of age, he was unable to write on a straight line. From 6 to 12 years of age, we observed

Electronic supplementary material The online version of this article (doi:10.1007/s12311-013-0460-4) contains supplementary material, which is available to authorized users.

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