Neuromuscular Disorders 18 (2008) 199–203

www.elsevier.com/locate/nmd

Natural history of CMT1A including QoL: A 2-year prospective study

L. Padua [a,b,*], D. Pareyson [c], I. Aprile [b], T. Cavallaro [d], A. Quattrone [e], N. Rizzuto [f], G. Vita [g], P. Tonali [a,b], A. Schenone [h]

[a] *Institute of Neurology, Università Cattolica del Sacro Cuore, Largo Francesco Vito 1, Rome, Italy*
[b] *Fondazione Don Carlo Gnocchi, Rome, Italy*
[c] *Fondazione IRCCS, Istituto Neurologico "Carlo Besta", Milan, Italy*
[d] *Department of Neurological and Visual Sciences, Section of Clinical Neurology, University of Verona, Italy*
[e] *Azienda O.U. Policlinico di Catanzaro, University of Catanzaro, Italy*
[f] *Policlinico GB Rossi, University of Verona, Italy*
[g] *Department of Neuroscience, Psichiatry and Anaesthesiology, Messina, Italy*
[h] *Department of Neurological and Vision Sciences, Genova, Italy*

Received 22 August 2007; received in revised form 7 November 2007; accepted 21 November 2007

Abstract

The Italian CMT study group performed a multicentre, multidimensional, longitudinal 2-year follow-up study using validated measurements of neurological impairment, disability and quality of life. The aim of the study was to evaluate the natural history of clinical features, disability and QoL in patients with CMT1A.

On clinical examination, CMT1A patients showed a significant reduction in muscle strength and sensory function during the 2-year follow-up period. However, there was no worsening of QoL or disability, nor was depression observed.

The discrepancy between the evolution of clinical features and the evolution of QoL and disability may be due to the development of compensatory strategies that help patients cope with the slow progression of the disease. Our observations provide information which may be useful when designing clinical trials in CMT.
© 2007 Elsevier B.V. All rights reserved.

Keywords: Charcot-Marie-tooth; CMT1A; Quality of life; Disability; Natural history

1. Introduction

Charcot-Marie-Tooth disease (CMT) is the most frequent inherited neuropathy. CMT patients initially develop progressive weakness in the lower limbs, which subsequently also affects the hands. Recently, Vinci and colleagues [1] reported that CMT patients' quality of life (QoL) is significantly lower when compared to Italian normative data.

In an editorial accompanying Vinci's paper, Shy and Rose [2] prompted further studies addressing the changes over time in CMT patients' QoL.

We developed a multidimensional protocol [3,4] in order to evaluate the evolution of clinical and neurophysiological features, disability and QoL in CMT. A 2-year follow-up, multicentre study was performed. Here, we report the results of a subgroup of CMT patients, those affected by CMT1A, which represents the most frequent subtype.

2. Patients and methods

2.1. Study design

From March 2003 to September 2004, we consecutively enrolled 211 CMT patients: 84 men (40%) and 127 women

* Corresponding author. Address: Institute of Neurology, Università Cattolica del Sacro Cuore, Largo Francesco Vito 1, Rome, Italy. Tel.: +39 06 3015 6623; fax: +39 06 3550 1909.
E-mail address: lpadua@rm.unicatt.it (L. Padua).

0960-8966/$ - see front matter © 2007 Elsevier B.V. All rights reserved.
doi:10.1016/j.nmd.2007.11.008

(60%), with a mean age of 42.5 years (SD 15, range 8–90), 137 of whom were affected by genetically confirmed CMT1A. Exclusion criteria were cognitive impairment (mini mental state <24) and presence of concomitant diseases that may influence results.

At recruitment and at follow-up (20–28 months after the baseline visit), all patients underwent neurological evaluation, QoL and disability assessments, according to the protocol described below. Intra- and inter-observer reproducibility was ascertained before patient enrolment. All patients were seen by the same neurologist both at baseline and during the follow-up evaluation.

Each patient was properly informed about the study and gave written informed consent. Data were stored in a specific database (NEUROPA) [5], and eventually sent to the coordinating centre (Rome) to be analysed.

2.2. Clinical assessment

Standard neurological evaluation was performed. Muscle strength was tested in accordance with the Medical Research Council (MRC) scale [6] in six muscles (biceps brachii, finger extensors, intrinsic hand muscles, quadriceps femoris, anterior tibial, and gastrocnemius).

Sensory function was assessed by lightly touching the patients' fingers and toes with a cotton swab, and graded as follows: 1, normal; 2, diminished (if patient did not feel three or more out of 10 strokes).

Vibration sense was evaluated by using tuning fork perception (128 Hz) and scored as follows: 1, normal (normal perception at malleolus); 2, diminished (abnormal perception at malleulus and normal at patella); 3, absent (abnormal at malleolus and patella).

2.3. QoL assessment

The Italian validated version of the Short-Form 36 (SF-36) [7–9] was administered to patients in accordance with standardised methodologies [7,10].

SF-36 consists of 36 questions about the patient's general health status. It consists of eight specific subscales comprising 'physical' and 'emotional' scores (physical functioning – PF, role-physical – RP, bodily pain – BP, general health – GH, vitality – VT, social functioning – SF, role-emotional – RE, mental health – MH), which are summarized in two main scores: Physical Composite Score (PCS) and Mental Composite Score (MCS). Low PCS scores indicate severe physical dysfunction, distressful bodily pain, frequent fatigue and a negative judgement of general health status. Low MCS scores indicate psychological distress and severe social disability due to emotional problems [7].

The Beck Depression Inventory (BDI), a self-administered 21-item test, was used to measure the degree of depression, if present [11]. The BDI provides a total-score-level of depression, with a score of 5–9 being considered as normal, 10–18 indicating mild depression, 19–29 moderate and 30–63 severe depression.

2.4. Disability assessment

The Barthel Index (BI) and the Deambulation Index (DI) were used to assess patients' physical disability.

The BI is considered the best scale for assessing the ability to perform daily activities such as personal care (feeding, dressing, hygiene) and mobility (transferring, walking/wheeling) [12,13].

The DI is a modified 8-point scale of the Patient Evaluation Conference System [14], here used to assess walking ability.

2.5. Follow-up

Each centre had to re-evaluate at least 75% of the CMT patients who had been initially enrolled. At the follow-up evaluation (20–28 months after the first evaluation) the patients underwent the same measurements as at the baseline (neurological evaluation, SF-36, Deambulation Index and Barthel Index).

2.6. Statistical analysis

Statistical analysis was performed using the STATSOFT (Statistica 4.5, OK, USA) package. Since ordinal or nominal scales were used for measurements, non-parametric analysis was performed. The comparison of measurements at initial and follow-up evaluations was carried out with the Wilcoxon Matched Pairs test. Throughout the statistical analysis, the level of significance was set at 0.05.

3. Results

137 consecutive CMT1A patients (86 females; mean age 44.0 years, range 11–90; mean age at onset 22.5 years, SD 17.5, mean duration of symptoms 22.6 years, SD 16.8) were recruited, 98 of whom (71%) (66 females; mean age 44.3 years, range 14–90; mean age at onset 23.2 years, SD 18.5, mean duration of symptoms 22.2 years, SD 17.1) were

Table 1
Clinical characteristics of the CMT1A patients

	Baseline	Follow-up	Drop-outs	Statistical analysis
CMT patients	137	98	39	NS
Age, years; mean (SD)	44.0 (15.0)	44.3 (15.6)	43.3 (13.7)	NS
Percentage of females	63%	67%	51%	NS
Age at onset; mean (SD)	22.5 (17.5)	23.2 (18.5)	20.7 (14.5)	NS
Duration of symptoms, years; mean (SD)	22.6 (16.8)	22.2 (17.1)	24.0 (16.1)	NS

Download English Version:

https://daneshyari.com/en/article/3080303

Download Persian Version:

https://daneshyari.com/article/3080303

Daneshyari.com