Reviewer's report

Title: Development and Validation of the Patient-Rated Ulnar Nerve Evaluation

Version: 3 Date: 14 February 2013

Reviewer: Mauro Mondelli

Reviewer's report:

- Major Compulsory Revisions

The authors adequately responded to most of my previous requests. But I propose again some queries that the authors have partially satisfied.

1) Clinical and electrophysiological methods and results.

a) First paragraph of “Patient recruitment” section, the sentence “inclusion criteria included electrophysiological confirmed ulnar nerve compression” is very general and vague.

The authors could state clearly what were the minimum electrophysiological criteria to assess ulnar nerve impairment. I suppose, reading Table 1, that the authors measured: - reduction of MCV across the elbow, - differential values of MCV across elbow in respect to below elbow-wrist segment (differential slowing), - abnormal CMAP amplitude decrease across elbow, - absolute decrease of CMAP amplitude (for which site of stimulation and in which recording muscle?), - absolute decrease in SAP amplitude in fifth finger-??? segment, - abnormal EMG of ulnar hand muscles. What were above electrodiagnostic parameters considered mandatory to include UNE cases?

b) In the cover letter of the revised manuscript, the authors ensure that the patients with peripheral nervous system disorders (as carpal tunnel syndrome and polyneuropathy) were also excluded basing on clinical and electrophysiological findings. But this does not appear in the exclusion criteria of cases of the revised manuscript.

2) In the discussion, in addition to many merits of the study, the authors could also indicate few small limits. They did not test the relationship between the score of PRUNE and age, education, clinical and electrophysiological UNE severity.

A variable may be related to each other, however a reliable questionnaire should not correlate with the age and education, the authors have not tested these relations.

- Minor Essential Revisions

The manuscript needs some editing corrections.
1) At first line of the third paragraph of Introduction: change “evdience” to “evidence”.

2) At first line of the second paragraph of methods (“Scale development process”) explain the acronym PRO.

3) At point a) of Reliability section. The number of ref. 29 in square brackets is repeated twice.

4) I have some queries and suggestions for the electrophysiological findings in Table 1:
   a) correct the title of the table because there are not only demographic results;
   b) slide the electrophysiological results (second column of the table) of a bottom row to align them with belonging parameters (first column);
   c) explain all electrophysiological acronyms in the legend of the table. Not all readers are familiar with these common electrophysiological abbreviations.
   d) are the results the mean values of all UNE patients?
   e) there is bit confusion in CMAP results: in which muscle were CMAP amplitudes recorded? I understand AE- and BE-CMAP, but not CMAP ADQ amplitude.
   f) change SNCV to “sensory nerve latency”, the unit of measure reported by the authors is “ms” and thus I suppose that the authors calculated latency and not nerve conduction velocity, in addition in which tract of the ulnar nerve was this sensory latency recorded?
   g) BE-CMAP and the result of 17.29%: I image that this is the percentage of increase of below elbow CMAP amplitude respect to that of above elbow. It is better to report the reverse i.e. the mean of the absolute value of the CMAP amplitude at below elbow and the percentage decrease in respect to CMAP amplitude at above elbow.
   h) what did “EMG surface confirmed” mean?
   i) what did “Needle EMG confirmed” mean? I think the authors referred to the presence of abnormal activity at rest (positive sharp waves and fibrillation potentials) and/or neurogenic pattern at full effort (fewer motor unit potentials with high firing) at EMG of the intrinsic hand muscles supplied by the ulnar nerve. Clarify this point.

5) The clinical findings of patients were reported only in Table 1. Move the findings of McGowan classification stages to “results” text of the manuscript, report the meaning of clinical findings belonging to the three grades of McGowan classification and provide the reference of McGowan’s paper.

- Discretionary Revisions
I repeat that I disagree with meaning in ICF language of the specific activities “lift a heavy object” (i.e. “raising up an object in order to move it from a lower to a
higher level, such as when lifting a glass from the table. Raising up an object in order to move it from a lower to a higher level, such as when lifting a glass from the table”). The shoulder, arm and flexor carpi radialis muscles were commonly used to lift heavy objects (in addition a glass is not a heavy object); the flexor digitorum superficialis and profundus muscles (only the muscular fascicles for the fourth and fifth fingers of the latter muscle are innervated by the ulnar nerve) allow to clench the objects. The ulnar nerve innervates most of the intrinsic muscles of the hand that are assigned only to fine movements of the hand. Often a neurophysiologist observed patients with mononeuropathy of the ulnar nerve, these subjects are unable to turn over a newspaper or a book or to keep up a deck of cards open between the fingers and thumb, they have difficulty in handling small objects as a glass, a pen, a key, but they can lift, albeit with a little difficulty, a heavy object for example a 10-kg bag. I know that this is only an academic discussion between a clinical neurophysiologist and the authors of this paper. The authors cannot ignore this daily observation.

**Level of interest:** An article whose findings are important to those with closely related research interests

**Quality of written English:** Acceptable

**Statistical review:** Yes, and I have assessed the statistics in my report.

**Declaration of competing interests:**

I declare that I have no competing interests