



Is kinematic analysis useful as a clinical test during whiplash associated disorders recovery? A clinical study



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1. Introduction

Kinematic analysis of cervical movement provides relevant information to assess whiplash associated disorders. Continuous cyclical movement trials provide relevant information to distinguish normal pattern, altered pattern and simulated pattern (malingering) with high sensibility and specificity [1]. WAD is very important in the context of compensation liability [2,3]. For this reason, to apply methods of objective assessment in a real context of application would be interesting [1].

2. Research Question

The main aim of this study is to prove the usefulness of biomechanical assessment in a rehabilitation clinic for WAD. Secondary objectives are: S1. Describe the patterns of whiplash recovery after the accident; S2. To assess the usefulness of biomechanical tests for the physician.

3. Methods

A descriptive study was carried out in which a cohort of 91 people with posttraumatic cervicalgia due to traffic accident was followed during their rehabilitation. All were remitted by an insurance company in the first 45 days after the accident. Cases with concomitant lesions of greater severity were ruled out. Each participant was assessed at the beginning of rehabilitation, once a week and at the end. Each assessment consisted of a kinematic analysis of the cervical spine with the Baydal et al. methodology [1]. An expert in biomechanical assessment made a clinical report and summarized the results of each assessment in: normal function, lightly altered function, altered function and not collaborator. The doctor did not know the result until the end of the prescribed rehabilitation. His opinion about the usefulness of the biomechanical test was collected in the final session.

4. Results

The sample consisted of 54% women and 46% men, with a mean age of 38 years. Most of the accidents were by rear collision. From the results of the biomechanical assessment, different profiles are distinguished: 1. People with normal functionality at the beginning of rehabilitation (29%) 2. People who recover normal functionality during rehabilitation (36%), 3. People who complete (13%) 4. People who complete their recovery with functional impairment (7%) and 5. People who do not collaborate during the biomechanical evaluations performed (15%). Functional stabilization is usually achieved after two or three weeks after the start of rehabilitation. The doctors considered the tests useful in 92% of the cases. Especially, when making the decision to discharge.

5. Discussion

The suitability of the biomechanical assessment in the rehabilitation of people with posttraumatic cervicalgia after traffic accident has been verified. It has been carried out in real experience and has proved its usefulness to the physicians involved in the process. The recovery patterns obtained point to the interest of using the kinematic analysis following the methodology described as complementary tests to make the prescription of rehabilitation programs more efficient and to improve care for the injured.

References

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