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Georg Supp
Stephen May

Commentary on "A prospective trial of mechanical physiotherapy for lumbar disk prolapse"

by D. Broetz et al. in J Neurol (2003) 250 : 746–749

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Sirs: We congratulate Doris Broetz and her colleagues for the large amount of data they sampled in the context of evaluation and treatment of patients with neuroradiologically confirmed disc prolapse.

Although Broetz and colleagues' work marks a right step in the direction of cooperation between physical therapists and medical doctors, there is a need for comments on the study itself.

The following items need clarification and comment:

McKenzie concept/centralization: Broetz et al. state that the reduction of neurological symptoms and signs forms the basis of a McKenzie evaluation and treatment. Furthermore, they describe centralization and peripheralization as synonyms for changes in the projected area of radicular pain associated with lumbar disc prolapse. These statements respecting the definition of previously described clinical phenomenon lack justification.

At the core of McKenzie's concept of Mechanical Diagnosis and Therapy (MDT) is the aim of developing self-management strategies for patients. Patient classification on the basis of history taking and clinical examination allows subclassification, which in turn directs management. The Mechanical Syndromes do not refer to specific anatomic structural diagnoses; rather conceptual models are used to explain the clinical presentation of a syndrome and lead to a logical treatment strategy [1].

Plenty of research has been done on the centralization phenomenon [2]. The prognostic value for non-specific Low back pain (LBP) has been validated consistently in multiple studies.

Broetz et al.'s definition of centralization is not adequate and has no scientific basis – adding another definition to a clinical phenomenon that has been well described and scientifically validated is neither helpful nor useful. Efforts to link centralization to anatomical structures have been made [3, 4] but radicular pain associated with disc prolapse has not been studied in this context yet.

Methodology: The study is presented as a trial of McKenzie therapy but there are co-interventions such as "therapeutic leg movements" and medication of NSAID and muscle relaxants. What are these leg movements? How often did the patients perform these movements?

One inclusion criterion for the trial is the verification of a disc prolapse by MRI/CT.

There is a broad consensus in research that imaging studies alone are not an effective tool for decision making in the clinical environment [5]. A high rate of false positive findings is described in the literature [6, 7]. Additionally there is insufficient information on the reasons for referral of 36 patients to neurosurgery. Did they all have bladder and bowel disturbance or grade 1/5 paresis?

The median duration of symptoms in the study was stated as 12 days. Former studies have already investigated patients at such an early stage and found evidence for the prognostic value of re-establishing lumbar extension [8, 9]. As Broetz et al. state, only a randomised controlled trial can investigate therapeutic efficacy. The study design is not suitable for the conclusions that are made.

Qualification of therapists, evaluating and treating the patients: Studies exploring reliability of the McKenzie evaluation, the ability to detect centralization and thus the ability to classify patients in subgroups have demonstrated the importance of the educational level of the examiners [10, 11]. At the time the study was run, none of the therapists in Broetz et al.'s study had passed the credentialling exam, which might be deemed a minimal prerequisite.

Outcome measurement: Blinding of assessor is not mentioned. Reliability of grading weakness – there is only poor reliability for the Oxford scale they seem to be using. Sensory loss – how is this measured?

Discussion: Broetz et al. claim that little is known about the natural history of disc prolapse. This statement is not based on current scientific knowledge. According to several studies the natural history of lumbar disc prolapse is mostly encouraging. Most patients have a good prognosis [12–16]. In light of this fact, the results of their intervention may only reflect natural history.

Broetz et al. state that their findings partially contradict McKenzie's theoretical model because they found that patients, despite showing a non-contained disc on MRI or CT, were nevertheless able to centralize their pain. This does not contradict anything, given the limited accuracy of imaging studies to determine symptomatic lesions discussed earlier; it is usually more appropriate to classify patients by symptom response rather than morphological changes. In the

McKenzie approach if symptoms of a patient demonstrate centralization during clinical examination this patient will be categorized into the reducible derangement group, and therefore likely to have a good prognosis. No matter what the MRI shows it is a process of making clinical decisions – not an interpretation of radiologic findings. The McKenzie approach is not treating the disc but the patient with his symptomatic and mechanical presentation and response to physical examination.

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G. Supp, PT, MT, Dip MDT (✉)
P. u. L. Z. im Rieselfeld
Freiburg, Germany
E-Mail: buero@pulz-freiburg.de

S. May, MA, MCSP, Dip MDT, MSc
Sheffield Hallam University
Collegiate Crescent Campus
Sheffield, UK