Reviewer's report

Title: The effectiveness of a specific exercise program in addition to first-line care for acute low back pain: A randomised controlled trial

Version: 1 Date: 9 October 2009

Reviewer: Thomas Ewert

Reviewer's report:

General comments
The RCT compares the short-term effect of adding a McKenzie exercise program to the first-line care of patients with acute low back pain. Outcomes were pain and global perceived effect. 138 of 148 participants completed the last follow-up. The addition of the exercise program to first-line care produced statistically significant reductions in pain when compared to first-line care alone. Nevertheless, this difference was considered too small to be clinically meaningful.

The authors conclude that the exercise program has no appreciable effect but it may reduce health care utilization.

Since exercises are well established in the treatment of chronic LBP, the evidence of physical exercises in the treatment of acute LBP is conflicting and scarce. Therefore, this study is targeting a relevant research question. Overall the quality of the study (RCT) is high. In contrast, the examined time period after intervention is short. Some points should be presented more in detail to make the manuscript easier to follow. I recommend including a rationale for the McKenzie exercise program, besides that it is used in practice (what variables/parameters is the technique targeting and why?) First, not all readers (like me) know that technique in detail. Second, it would be worthwhile for the discussion.

The McKenzie program is described as specific exercises; therefore it would be interesting for the reader to know more about commonalities and differences between general (physical) exercises and McKenzie.

Discretionary Revisions:

2) P4&5 Background
Please provide more information about the mechanisms how the McKenzie exercise program is targeting factors relevant in LBP. Is it to strengthen the muscles, or to improve the blood flow, or to achieve a better posture, etc.? The reason why this issue is important is that the McKenzie exercise program is presented more or less as a kind of “general physical exercise program”. But obviously, there are some assumptions made for the McKenzie program, which may not commonly share by experts for general physical exercises. For example: On p4 it is stated that the pain relief is expected promptly. From a general physical exercise perspective you may argue that training exhausted muscles would not dampen the level of pain promptly. Instead, a possible hypothesis
could be that such exercises will reduce the risk for recurrence of new LBP episodes. In respect to the amount of training, it may be questionable whether 4 sessions (in median) are sufficient to strengthen the muscles (to strengthen the muscles may be one rationale for using general physical exercises- but this is not supported by evidence that this is in deed the reason for recovery). If no information about the assumed mechanisms of the treatment is provided, the discussion is lacing a relevant issue.

Minor Essential Revisions

1) P2 Abstract and Method / Result section
Methods: you have different primary outcome measures. Since you have multiple tests you should adjust the alpha risk.

3) P7 first line care
“Although there was no limit to the number of follow-up visits, physicians were instructed to restrict treatment to advice and simple analgesics.”

Have the number of follow-up visits been documented? This would be interesting information about attention patients got. Please, provide information about the number of follow up visits if available.

4) P10 Assessment Procedure
Please provide information about the data collection for health care utilization. Were all contacts documented /analyzed or just those in respect to LBP?

5) P10 Statistical analysis
How exactly was the intent-to-treat analysis conducted?

6) P 11
Information about the adjustment (Table 2) is lacking. For which parameters has been adjusted and why? This is not obvious since this you are reporting an RCT and both groups showed no difference at baseline.

7) P12
“Thirty-seven (53%) subjects in the Exercise Group and 32 (47%) in the First-line Care Group developed persistent low back pain;…” How is “persistent pain” defined? As ongoing, permanent pain since inclusion?

8) Discussion:
A structured paragraph about limitations is missing

9) Figure 1
22 patients met the inclusion criteria, but were excluded. Why that? Please provide more information.

Which journal?: Not appropriate for BMC Medicine: an article whose findings
are important to those with closely related interests and more suited to BMC Musculoskeletal Disorders

**What next?:** Offer publication in BMC Musculoskeletal Disorders after minor essential revisions

**Quality of written English:** Acceptable

**Statistical review:** Yes, but I do not feel adequately qualified to assess the statistics.

**Declaration of competing interests:**

I declare that I have no competing interests!