Reviewer's report

Title: Finger joint laxity and number of previous pregnancies as antenatal markers of pregnancy induced back pain. A cohort study.

Version: 1 Date: 4 July 2013

Reviewer: Nina Vollestad

Reviewer's report:

This study aims at examining the association between general hypermobility and postpartum lumbopelvic pain by exploring data obtained from a previous cohort study. The present study has in principle a strong design for identifying predictors, yet there are several short-comings that reduce its value.

Major Compulsory Revisions

1. Apart from a few relatively recent Scandinavian studies, the authors seem to lean non literature and knowledge available at the time when the data were collected (first half of the 1990-ies). Over the last decade quite an extensive number of studies have provided knowledge of relevance for the questions addressed in the present paper. The authors need to include these in their discussion, even though the present study have not included some of the more recently identified predictors or risk factors for lumbopelvic pain.

2. The main focus of this paper is on hypermobility (or laxity) which is measured by the change in angle of the forth finger with a given force applied to it. No reference for the method is given, nor any measurements properties. The force applied is given, but the authors also need to describe how far the instrument was moved. Otherwise, it is hard to understand to what extent this method actually picks up differences in laxity. It is well known form other joints that this kind of measures usually has large measurement errors. Usually changes or differences within 10 degrees are assumed to be undetectable by these measures. Unless the authors provide data showing better results, we must assume the same uncertainty applies for their method. The authors also need to describe their rationale for the chosen method to assess laxity. How can you be sure that this method is a valid measure?

3. The authors claim that their measurement of laxity reflects a general hypermobility, i.e. that the inter-individual differences capture general and non-pregnant properties. Yet, their first measure is obtained after 6-19 weeks of pregnancy. Knowing that for instance relaxin increases in early phases of pregnancy, and recent studies have provided support to the impact of relaxin on laxity, it is difficult to use a measure of mobility in early pregnancy as an indicator of a general hypermobility. It seems hard to distinguish between changes induced in early pregnancy from the general state. The authors need to discuss these aspects and not ignore them.
4. The outcome measure is the presence of back pain vs no back pain. Altogether only 16 women reported back pain 13 weeks postpartum, resulting in some uncertainty of the calculated estimates. The authors need to consider this in their interpretation. Other possible outcomes were also included (e.g. Disability rating index (DRI) and pain intensity) and it is not obvious that the chosen one is the best. The DRI score is quite low for the back pain group and the SD values quite large, indicating that quite a few of those without back pain have a high DRI, and vice versa. A similar pattern is seen for pain intensity. The authors should therefore also include analyses using DRI and pain intensity as outcomes to further substantiate their results.

5. It is hard to understand the study has sufficient power to allow the analysis behind Fig. 1. It probably needs inclusion of interaction effects in the model, and the number is probably too low for this.

Minor Essential Revisions

6. The authors shift in their opinion of what kind of factor they examine hypermobility to be. In the title they use the term "marker", in the abstract they use "the effect of" or "factors important for", in the introduction they aim at identifying "a predictor" and in the conclusion they use "factors that favour the development". The authors need to decide whether they simply explore an association or whether they aim at determining the impact of a set value in predicting back pain in relation to pregnancy.

7. The reference list is insufficient. Newer and internationally published papers should be used.

**Level of interest:** An article of limited interest

**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