Letter to the editor : Physical examination tests for screening and diagnosis of cervicogenic headache : a systematic review by Rubio-Ochoa et al. (2015)

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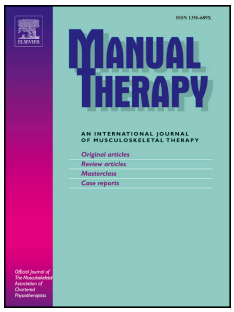

Letter to the Editor: Physical examination tests for screening and diagnosis of cervicogenic headache: A systematic review by Rubio-Ochoa et al. (2015)

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Correspondence to the study "Physical examination tests for screening and diagnosis of cervicogenic headache: A systematic review by Rubio-Ochoa et al. (2015)

Physical examination tests for screening and diagnosis of cervicogenic headache; too good to be true?

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Correspondence to the study "Physical examination tests for screening and diagnosis of cervicogenic headache: A systematic review by Rubio-Ochoa et al. (2015)

Dear editor,

With interest, we have read the systematic review for cervicogenic headache (Rubio-Ochoa et al.,2015) and we would like to congratulate the authors with their publication. This study concluded that there is sufficient evidence showing high level reliability and diagnostic accuracy for physical tests concerning the diagnosis of cervicogenic headache. However, we are somewhat surprised about their conclusion and there are some topics we would like to debate.

Our first point of concern is the search strategy. The index-tests, for example, are globally described (physical assessment, physical examination) and consequently relevant studies could have been missed. When repeating the provided search in MEDLINE/Pubmed we retrieve far more hits than the 26 which are described in the Flow Chart. Also the procedure of the data extraction is not clear. This should be performed by two independent reviewers to prevent errors in reporting validity or reliability values or in calculations from the raw data. Re-calculating the raw data from the study of Zito et al.,2006 shows that 38/54 CH patients were positive on the PAIM at the C0-C1 level (sensitivity= 70.4% [95%CI: 56.4% to 82 %]) and 12/50 controls were positive on this test (specificity =of 76 % [95%CI: 61.8% to 86.9%]. This is not corresponding with the reported sensitivity (59%) and specificity (82%) in the review.

We also have some problems with the risk of bias assessment. One of the most important items of the criteria list in case of diagnostic accuracy studies is 'patient selection'. An inadequate patient selection can over- or underestimate accuracy. In Table 2 the patient selection was scored to be inadequate in 3 of the 4 (!) studies. Even though, reading the full-text papers no consecutive or random sample of patients suspected of CH were enrolled in all included studies on diagnostic accuracy. Moreover, the controls in 4 of 5 studies (except Hall., 2010b) were healthy subjects introducing spectrum bias with a high risk to overestimate diagnostic accuracy (Lijmer et al.,1999). Furthermore, in this case, the estimates of test accuracy may not reflect the performance of the test in clinical physical therapy practice. When we consider the patient selection of the included papers on diagnostic accuracy we read that 4 out of five (except Jull et al.,2007) studies used the diagnosis CH according to the International Headache Society (IHS., 2004). Unfortunately, only 1 paper provided information about the headache characteristics of the included patients to verify the applied inclusion criteria (Hall et al., 2010b). Moreover, none of the included studies used an appropriate reference test to verify the diagnosis of CH. A diagnostic block could have been used as this test is considered to be the most appropriate reference test to confirm the diagnosis of CH (Bogduk and Govind, 2009). These items should have been critically considered in the review because this may have overestimated diagnostic accuracy.

Considering these high risks of bias for 'patient selection', 'reference test', and the modified diagnostic accuracy values, the results of this systematic review should be interpreted with caution and might overestimate the importance of these tests as diagnostic tools in clinical practice.

The conclusion on diagnostic accuracy of physical tests to diagnose CH seems 'too good to be true' and should be attenuated.

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