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Treatment-based classification of low back pain – who are the unclear classifications?

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Treatment-based classification of low back pain – who are the unclear classifications?

Stanton TR, Fritz JM, Apeldoorn AT, Wand BM, Hancock MJ.

A recent focus in low back pain research has been to identify patient subgroups that respond best to certain treatments. To integrate these subgroup findings into a useable form, a treatment-based classification algorithm for LBP was created. To allow the algorithm to be comprehensive – eg, provide a classification for all patients – additional criteria are provided to assist therapists’ decisions for patients who do not clearly meet a treatment subgroup (unclear classifications).

Recent research found that approximately 34% of patients will receive unclear classifications using the algorithm. It has also been shown that the reliability of the classification decision for unclear classifications is poor – significant variability between raters exists. In addition to poor reliability, outcomes for patients receiving unclear classifications may be inferior to outcomes of those receiving clear classifications. Thus the aim of the current study was to determine if people receiving unclear classifications are different from those with clear classifications in the hopes to refine the classification algorithm.

METHODS

Participants
- 529 consecutively recruited LBP patients seeking care.
- 446 patients had acute/subacute LBP and 83 patients had chronic LBP

THERAPISTs
- 5 PTs considered expert in algorithm use
- 10 PTs expert in algorithm; 16 PTs with minimal algorithm experience
- 1 PT considered in expert in algorithm use classified 96% of patients

Baseline assessments
- All patients completed an 11-point pain NRS, the modified Oswestry disability questionnaire, the Fear Avoidance Beliefs Questionnaire, and a pain diagram. All patients then underwent a standardised history and physical examination that included:
  - Repeated movement assessment
  - Abrupt movement assessment
  - Lumbar mobility and pain response (PA pressure test), prone instability test

Statistics:
- 10 baseline variables were chosen a priori to include as independent variables.
- The primary analysis was a univariate logistic regression (dependent variable: clear/unclear classification) considering all patients with LBP
- This was followed by a multivariate regression analysis, placing all factors in (significant results indicated by yellow highlight).
- Two sensitivity analyses were undertaken (identical methodology to above):

Results

Acute/subacute LBP

<table>
<thead>
<tr>
<th>Independent variables</th>
<th>Clear classification</th>
<th>Unclear classification</th>
<th>Univariate analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender (% male)</td>
<td>22.6</td>
<td>38.5</td>
<td>2.14 0.78 – 0.59</td>
</tr>
<tr>
<td>Duration of symptoms (days)</td>
<td>90 (156)</td>
<td>296 (159)</td>
<td>0.001 1.00 – 1.001</td>
</tr>
<tr>
<td>Symptoms distal to the buttock (% Yes)</td>
<td>75.8</td>
<td>83.1</td>
<td>0.17 0.99 – 1.07</td>
</tr>
<tr>
<td>Frequency of previous episodes (% increasing)</td>
<td>55.5</td>
<td>46.7</td>
<td>0.09 0.51 – 0.93</td>
</tr>
<tr>
<td>Initial FABQ-PA score</td>
<td>15.9 (24.6)</td>
<td>14.3 (22.5)</td>
<td>0.98 0.98 – 0.98</td>
</tr>
<tr>
<td>Initial FABQ-W score</td>
<td>25.0 (12.3)</td>
<td>39.4 (13.1)</td>
<td>0.09 0.51 – 0.93</td>
</tr>
<tr>
<td>Initial ODQ score</td>
<td>5.7 (1.3)</td>
<td>5.6 (1.3)</td>
<td>0.97 0.89 – 1.07</td>
</tr>
</tbody>
</table>

Chronic LBP

<table>
<thead>
<tr>
<th>Independent variables</th>
<th>Clear classification</th>
<th>Unclear classification</th>
<th>Univariate analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender (% male)</td>
<td>49.4</td>
<td>54.0</td>
<td>0.66 0.50 – 0.89</td>
</tr>
<tr>
<td>Duration of symptoms (days)</td>
<td>30.7</td>
<td>29.5</td>
<td>0.85 0.87 – 1.07</td>
</tr>
<tr>
<td>Symptoms distal to the buttock (% Yes)</td>
<td>54.8</td>
<td>51.3</td>
<td>0.05 0.58 – 1.34</td>
</tr>
<tr>
<td>Initial FABQ-PA score</td>
<td>16.4 (15.9)</td>
<td>14.9 (15.6)</td>
<td>0.99** 0.92 – 0.99</td>
</tr>
<tr>
<td>Initial FABQ-W score</td>
<td>34.9 (11.1)</td>
<td>34.9 (11.1)</td>
<td>0.98 0.87 – 1.01</td>
</tr>
<tr>
<td>Initial ODQ score</td>
<td>38.2 (13.8)</td>
<td>39.3 (13.1)</td>
<td>0.81 0.71 – 0.90</td>
</tr>
<tr>
<td>Initial Pain score</td>
<td>5.7 (1.9)</td>
<td>5.8 (1.9)</td>
<td>0.98 0.88 – 1.08</td>
</tr>
</tbody>
</table>

People who had an unclear classification tended to be less affected by their back pain (less disability/fear avoidance beliefs) although they had a longer duration of symptoms than those with clear classifications. These findings raise the possibility that people with unclear classifications may benefit from:
- A general exercise approach (supervised, long duration, high intensity) → add a subgroup to the algorithm?
- Minimal intervention of advice and reassurance → exclude them from the algorithm?

Future trials should compare the modified algorithm to previous versions to determine if the modifications result in better outcomes.