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?

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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 usable 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 present 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
- Secondary analysis of baseline data from three previously completed studies.
- Participants:
  - 529 consecutively recruited LBP patients seeking care.
  - 446 had acute/subacute LBP and 83 had chronic LBP.
- Version of the algorithm:
  - 3 treatment subgroup version (no traction)
  - 4 treatment subgroup version
  - 3 treatment subgroup version (no traction), modified for chronic LBP
- Therapists:
  - 5 PTs considered expert in algorithm use
  - 10 PTs expert in algorithm
  - 16 PTs with minimal algorithm experience
- Baseline assessments:
  - All patients completed an 11-point pain NRS; the modified Oswestry disability questionnaire, the Fear Avoidance Beliefs Questionnaire, + a pain diagram.
  - All patients then underwent a standardised history and physical exam that included:
    - Repeated movement assessment
    - Aberrant movement assessment
    - Lumbar mobility and pain response (PA pressure test), prone instability test
  - 96% of patients had clear/unclear classifications using the 4-treatment subgroup algorithm.

ALGORITHM
- 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):
  - Two sensitivity analyses were undertaken (identical methodology to above):
    - Univariate analysis
    - All LBP
      - Age (years) 38.6 (10.8) 45.4 (11.3) 1.07** 1.02 – 1.12
      - Duration of symptoms (days) 965 (911) 1313 (948) 1.00 1.00 – 1.001
      - Frequency of previous episodes (≥ 3) 36.5 50.0 1.50 1.36 – 1.64
      - Symptoms distal to the buttock (%) 32.7 57.2 0.88 0.55 – 1.42
      - Initial FABQ-W score 15.9 (11.0) 14.9 (11.0) 0.99 0.97 – 1.01
      - Initial ODQ 39.2 (14.3) 33.9 (15) 0.98** 0.97 – 0.99
      - Initial FABQ-PA score 11.8 (5.1) 11.6 (5.5) 0.99 0.91 – 1.08
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RESULTS
- All LBP
  - Gender (% male) 51.0 46.7 0.84 0.60 – 1.19
  - Age (years) 38.7 (5.7) 41.1 (6.0) 1.02* 1.003 – 1.033
  - Duration of symptoms (days) 90.8 (36.3) 296.3 (159.0) 1.001* 1.000 – 1.001
  - Symptoms distal to the buttock (% Yes) 53.0 46.7 0.78 0.55 – 1.10
  - Initial FABQ-W score 16.0 (5.5) 13.5 (5.4) 0.98* 0.96 – 0.99
  - Initial ODQ 36.4 (7.5) 30.6 (7.8) 0.98** 0.96 – 0.99
  - Frequency of previous episodes of LBP (% Yes) 75.3 83.1 1.61* 1.04 – 2.49
  - Initial FABQ-PA score 11.8 (5.1) 11.6 (5.5) 0.99 0.91 – 1.08
  - Initial ODQ 38.2 (13.8) 33.9 (15) 0.98** 0.97 – 0.99
  - Initial Pain score 6.5 (1.4) 5.9 (2.0) 0.81 0.62 – 1.05

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.