

CAT: Validation of a clinical prediction rule for patients with LBP who improve with manipulation

Clinical Bottom Line(s):

1. Patients who received 2 sessions of spinal manipulation and exercises improved more (reduced disability) than patients who received back exercises alone at 1 week, 4 weeks, and 6 months.
2. Patients who meet the spinal manipulation clinical prediction rule were more than twice as likely to show improvement than those who didn't meet the rule
3. Patients who meet the spinal manipulation clinical prediction rule and received manipulation consumed less medical care at 6 months compared to other patients

Citations(s):

Childs JD, Fritz JM, Flynn TW, et al. A clinical prediction rule to identify patients with LBP most likely to benefit from spinal manipulation: a validation study. *Ann Int Med.* 2004;141:920-928

Three/four part clinical question.

In adults with acute LBP, is there a clinical prediction rule to determine if thrust-joint manipulation (TJM) and exercise is more effective than exercise alone for reducing pain and disability?

The study:

This was a multi-center, randomized clinical trial. Patients were examined and classified according to previously established clinical prediction rule criteria. All treatments were administered by physical therapists blinded to examination & classification results. Patients in both groups were treated twice the first week and once a week for the next 3 weeks for a total of 5 treatment sessions. Outcome assessments were made by examiner blinded to group assignment at 1 week, 4 weeks and six months. Classification as Success or Non-success based on Oswestry disability scores and raw Oswestry scores were the primary outcome measures and an intention to treat analysis was used. The purpose of this study was to validate a clinical prediction rule for patients with LBP who respond to manipulation.

The study patients:

131 consecutive patients aged 18 – 60 who were referred to physical therapy with a primary complaint of low back pain, with or without pain into the leg, and an Oswestry score $\geq 30\%$. Patients who were pregnant, had serious spinal pathology, and signs consistent with nerve root pathology were excluded.

Control Group(s):

Patients received a low stress aerobic exercise program (treadmill or stationary bike with a goal of 10 minutes, self-selected pace) and a strengthening program targeted toward trunk stabilizing musculature. Exercises were performed once daily within the limits of pain and patients were told to stay active.

Experimental Group

Patients received a previously described lumbo-pelvic TJM procedure only during the 1st 2 visits. Subjects then performed the same exercise regimen as the control group the last 3 weeks.

The evidence:

Outcome	Manipulation + Exercise	Exercise Only	RRR	ARR	NNT
Success*	92%	36.1%	97%	35.2%	1.9

*Success was defined as a $\geq 50\%$ reduction in their initial Oswestry disability score at 4wks..

(cont.)

Outcome	Manipulation plus Exercise vs Exercise alone (for patients + on the rule)	Effect Size Index
Oswesty 1wk (mean diff)	20.4	1.9
Oswesty 4wk (mean diff)	14.6	1.4

Comments:

1. This is a level 3 clinical prediction rule that can be use to improve clinical decision making in patients with LBP
2. The findings of this study are similar to the developmental study (Flynn et al., 2002)
3. Patients with LBP with three ore more of the following criteria should be treated with TJM and exercise: symptom duration of current episode $f < 16$ days, not having symptoms distal to the knee, FABQ work subscale ≤ 19 , ≥ 1 hypomobile lumbar spine segments and ≥ 1 hip with $> 35^0$ internal rotation range-of-motion.

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