

A New Look at Low Back Complaints in Primary Care

A RAMBAM Israeli Family Practice Research Network Study

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BACKGROUND. Low back pain (LBP) is one of the most frequent reasons patients seek consultations in primary care, and it is a major cause of disability. Our research examines the natural history of LBP and the prediction of chronicity in the context of patients presenting to family medicine clinics.

METHODS. We performed a prospective cohort study of new episodes of LBP within the framework of a national family practice research network. The setting was 28 primary care family practice clinics located throughout Israel. Of 238 eligible subjects, 219 (92%) completed the study.

RESULTS. During the 2-month study period, 2 subjects were referred to the emergency department and discharged, and 2 others were hospitalized. Forty-five percent did not require bed rest, and 38% of the employed were not absent from work. Seventy-one percent showed improvement in functional status; however, only 37% noted complete pain relief. Clinical and demographic data usually did not predict LBP-episode outcomes. The strongest predictors of chronicity were depression, history of job change due to LBP in the past, history of back contusion, lack of social support, family delegitimization of patient's pain, dissatisfaction with first office visit, family history of LBP or other chronic pain, coping style, and unemployment.

CONCLUSIONS. The cohort patients displayed a relatively benign natural history of LBP, matched by benign clinical behavior from their physicians. In Israeli primary health care, acute LBP is infrequently associated with hospitalization or prolonged work absenteeism. Although most patients have functional improvement, pain often lingers. Almost all predictors of chronicity are psychosocial.

KEY WORDS. Low back pain; primary health care; history. (*J Fam Pract* 1999; 48:299-303)

Low back pain (LBP) is one of the most frequent reasons for office visits with primary care physicians in the United States, Europe, and Israel.^{1,3} It is a health problem with important medical and socioeconomic dimensions and is a major cause of disability.^{4,7} Of individuals with acute episodes of LBP, 5% to 10% develop a chronic condition.⁴ LBP is the single most common cause of limitation of activity in patients younger than 45 years.⁸

Despite the worldwide prevalence of LBP in primary care and the flurry of national guidelines designed to manage it, there are still no universally accepted, effective, and cost-efficient diagnostic and treatment protocols.⁹⁻¹² Patients are often not satisfied with the care they receive for LBP,¹³⁻¹⁵ and clinicians often find that treating LBP is one of the most difficult and unre-

warding aspects of clinical medicine.^{16,17}

Part of the problem comes from significant gaps in the current knowledge about treatment of LBP. Recent longitudinal studies^{18,21} have started to modify views about back pain epidemiology and management in primary care.^{5,22} Our research further examines the natural history of LBP and the prediction of chronicity in the context of patients presenting to family medicine clinics.

METHODS

The RAMBAM Israeli Family Practice Network is a practice-based research group that was established in 1992. The network is an organization of family physicians from throughout Israel who work cooperatively on research projects of health policy and primary care interest. Membership in the network indicates that the physician has specialty status or eligibility in family medicine, works in a community practice, and has a stable patient list. For our study, physician inclusion criteria were agreement to record the necessary data at the index visit and again 2 months later, and willingness to provide access to patient records. Participation in the study was offered to all network members, and 28 volunteered to take part.

Participating physicians were asked to enroll consecu-

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tive patients older than 21 years who had the chief complaint of a new episode of LBP. For an episode to be considered new, the patient must have had no LBP during the month before the index visit and no functional limitation for the previous 2 months. LBP was defined as pain, discomfort, stiffness, fatigue, or changes in sensation in the region bounded by the 12th thoracic vertebra and the gluteal fold, with or without radiation to the legs. Enrollment (with nonsimultaneous start at the various practices) continued from January 15, 1993, to June 31, 1993, with 238 patients meeting the inclusion criteria. Informed consent was obtained from all subjects at enrollment.

Physicians recruited to the study were provided verbal and written instructions, and were contacted monthly by research assistants. After the patients were enrolled, the physicians were instructed to allow the consultation to proceed normally with evaluation and management guided by their customary patterns of diagnosis, treatment, referral, and follow-up.

Immediately after the visit, the physician and patient independently completed questionnaires that were placed in sealed envelopes and mailed to the study office. Data requested from the physician at the initial visit included physical examination results, radiographic findings, diagnoses, treatment choices, appraisal of the patient's prognosis, and assessment of the patient's pain severity using the pain chart of the Dartmouth Cooperative Information Project (COOP) functional status scale.²³ The patient questionnaire included questions on sociodemographic and employment data, modified work APGAR score,²⁴ family pain history, Dartmouth COOP functional status charts, and a 3-question depression screening tool.²⁵ Information was gathered from subjects on LBP symptoms, disability, compensation status, work loss or adjustment, and satisfaction with the patient-physician encounter. Patient pain severity was measured on a 5-point Likert-type scale ranging from 0 = no pain to 5 = intolerable pain. We also used a 4-point disability scale, where 0 = no limitation and 4 = total functional incapacitation. Participating physicians invited subjects for follow-up visits 2 months after the index visit. The follow-up questionnaire was a shorter version of the initial instrument with emphasis on a number of outcome measures: hospitalizations, back surgery, bed rest, work absenteeism, functional limitation, and pain. In cases where the physician was unable to provide follow-up data, research assistants interviewed the patients by telephone, completing all items for the 2-month follow-up except the Dartmouth-COOP charts and the visual analog scale (26 cases).

Quality control was maintained by reviewing all received questionnaires for completeness. Physicians were called to correct inadequacies, when detected. In addition, research assistants visited a sample of 5 practices to check questionnaire data against patient records.

The data were recorded and analyzed using the Statistics Package for Social Sciences (SPSS; Chicago,

Illinois). Responses for questions with discrete outcomes were compared with chi-square tests. Prognostic factors for the presence of back pain at 2 months after the index visit were tested by univariate logistic regression.

RESULTS

A total of 238 patients were enrolled in the study (Table 1). Follow-up data at 2 months was recorded for 219 patients (92%). The 19 who were lost to follow-up did not differ from the study group in baseline characteristics.

The ratio of women to men for those not enrolled ($n = 243$) was similar to that of the study population (46% and 49%, respectively). Reasons for exclusion were LBP during the month before the index episode ($n = 103$); functional limitations during the previous 2 months ($n = 12$);

TABLE 1

Baseline Characteristics of Subjects with Low Back Pain (N = 238)

Characteristic	%
Sociodemographic variables	
Mean age, years (SD)	46 (13.1)
Men	49
Israeli born	46
Married	83
Education (> 12 years)	68
Residency (urban)	71
Employed	75
Smokers	33
Work includes bending, lifting, or vibration	71
Physically active (self-report)	39
Back pain history	
1 or more previous acute episodes	68
Prior back surgery	1
Prior hospitalization for back pain	6
Work change as a result of back pain	7
Prior back injury	18
Complaint	
Radiation of pain down a leg	43
Physical findings	
Straight leg raising	28
Neurological signs (other than straight leg raising)	7
Tenderness	86
Diagnosis (physician's discretion)	
Low back pain without radiation	57
Low back pain with radiation	34
Radiation without pain	6
Other (eg, spondylosis)	3
Psychosocial variables	
Depression	7
Have family or social support	64
Friends doubt pain	9
Family members doubt pain	8
History of back or other prolonged pain in family	37

SD denotes standard deviation.

age younger than 21 years ($n = 64$); pregnancy ($n = 20$); infectious disease ($n = 4$); neoplasm or malignancy ($n = 16$); and subject not assigned to physician's list ($n = 66$). More than one criterion may have applied to each patient.

Among our study's cohort, 60% (131) visited their physicians during the first week after the onset of LBP and approximately 30% (66) during the second week. Physicians diagnosed simple LBP in 57% and LBP with sciatica in 34%. During physician examination, positive straight leg raising was present in 28%, other neurologic signs were apparent in 7%, and 86% manifested point-tenderness. Seven percent of patients had positive screening results for depression, and 37% had a family history of chronic pain. Thirty-six percent stated that they lacked family support during the pain episode, and 8% (20) felt that family members expressed doubt about the severity of their symptoms. Nine percent reported experiencing these doubts from colleagues at work.

At the end of the first visit, most physicians recommended medications (80%) and bed rest (64%). Twenty percent of the patients were referred to physiotherapy and 14% to additional paramedical or alternative providers (eg, chiropractors, massage therapists). Laboratory and imaging investigations were recommended in 11% and referral to a surgical consultant in 0.8%. No patients were initially hospitalized.

During the 2 months after the index visit, 120 patients made 27 additional visits to their family physicians, while 28 visited other medical and orthopedic specialists. Two subjects were referred to an emergency department for LBP, while 2 others were hospitalized during this period.

Of those patients who were employed, 38% (68) did not miss work, while 53% (94) missed up to 1 week. Thus, 91% of the employed patients were back to work within 1 week. Forty-five percent (98) did not need bed rest, 23% (50) stayed in bed up to 3 days, and 24% (52) required 4 to 7 days of bed rest. Overall, 92% (200) of patients were out of bed within 1 week.

During the 2 months after the index visit, LBP severity lessened for the vast majority of the cohort, as they shifted from more severe pain categories to milder ones ($P < .002$). Functional limitation also improved. Only a minority of subjects reported total recovery, however. At the 2-month follow-up, complete pain relief was noted for 37% (77) of the patients, and only 25% (55) reported no functional limitation. Half of the subjects who experienced total pain relief reported this within 1 week of the index visit, with an additional 25% within 2 weeks.

Univariate logistic regression identified variables associated with chronicity (Table 2). As ranked by odds ratios, the most significant were depression, having an imaging test ordered at the first visit, history of job change because of LBP, history of back contusion, work absenteeism during current episode, unemployment, work absenteeism because of previous LBP episodes, family history of chronic pain, delegitimization (doubt of pain severity by a family member or work colleague), and lack of social and family support.

DISCUSSION

The study's cohort demonstrated a largely benign natural history of LBP within primary care: Pain symptoms are likely to improve but not disappear; functional status is likely to improve, but significant limitation may persist in a significant minority; and return to work is almost certain, in spite of the persistence of significant pain and functional limitation.

The lack of uniformity in definitions and instruments between studies of the natural history of LBP makes comparison difficult.¹⁸ Bearing these limitations in mind, the findings of Coste and colleagues²⁰ and Van Korff and coworkers²⁶ of continued pain and functional disability at follow-ups of 90 days and 1 year, respectively, are very similar to our own. Older studies, such as those by Roland and Morris²⁷ and Chavannes and colleagues²² (both with 1-month follow-ups) also had comparable results. However, in some studies disability at follow-up was significantly higher than what we detected. This is probably because of the inclusion of both cases with recent and nonrecent onset in those studies. Other possible explanations may have to do with patterns of help-seeking behavior, workers' compensation, and primary care systems in the different countries (France, United States, United Kingdom, Holland, and Israel).

TABLE 2

Prognostic Factors for the Presence of Back Pain at 2-Month Follow-up (N = 219)

Predictor	P*	Odds Ratio
Depression (yes vs no)	.037	5.0
Having a previous x-ray at first visit (yes vs no)	.007	4.5
Job change for LBP in the past (yes vs no)	.055	4.4
Back contusion in the past (yes vs no)	.006	3.7
Unemployment vs employment (yes vs no)	.032	3.5
Missing working days this episode (> 5 vs < 5)	.000	3.5
Missing working days last year for LBP (yes vs no)	.001	3.0
LBP or other chronic pain in family (yes vs no)	.001	3.0
Family doubt vs do not doubt pain	.010	3.0
Family or friends to count on (yes vs no)	.024	2.8
Know vs do not know reason for pain	.018	2.5
Not satisfied with visit vs satisfied	.023	2.5
Compensation status (yes vs no)	.011	2.5
Education, years (>12 vs < 12)	.003	2.4
Visit to physician after > 5 vs < 5 days of pain	.005	2.4
Previous episodes of LBP (many vs few)	.015	2.3
Job difficulty (yes vs no)	.012	2.2
Physician prognosis (chronic vs remission)	.025	2.1
Disagreement vs agreement with physician on sick leaves	.021	2.0

Note: At follow-up, 37% of the subjects were without pain.

*Univariate logistic regression test.

LBP denotes low back pain.

Prediction models for the natural history of LBP have been previously reported.^{4,8,18,20,27} These have tended to underscore the role of psychosocial variables as major contributors to chronicity in LBP. Our findings are in line with this literature. However, we have identified some formerly unreported variables that emphasize aspects of the biopsychosocial^{28,29} and patient-centered³⁰ models of care: patient-doctor agreement on sick leave days, overall satisfaction with the first office visit for the episode, patient's coping style, and delegitimization of LBP by the family.

Although sciatica was present in 34% of our patients, they did not have more severe pain complaints or excess functional limitation compared with the subjects with simple LBP. Sciatica was not associated with different outcomes at follow-up, nor did it predict persistence of pain. Contrary to the usual findings reported in the literature,³¹⁻³³ our research seems to emphasize the similarities between simple LBP and sciatica in primary care.

LIMITATIONS

Several limitations are present in this study. The recruitment of patients with new episodes of LBP biased the sample toward more benign cases, excluding patients with recent recurrences or chronic LBP. The short follow-up and mild nature of LBP in our cohort weaken the strength of our chronicity prediction and natural history observations. A larger sample size, a longer follow-up, and a more uniformly defined instrument used among studies could further clarify the question raised.

CONCLUSIONS

Our study seems to confirm the new paradigm of LBP^{15,20,31} that has been emerging; namely, that pain does not disappear completely for most patients, and yet they continue to work. In addition, it indicates that looking at its clinical course as either acute or chronic is an oversimplification. Finally, it demonstrates more fully that LBP is a biopsychosocial condition¹⁵ in which psychosocial and patient-centered variables play a role in predicting the clinical course.

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