General practitioners' management of acute back pain: a survey of reported practice compared with clinical guidelines

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Abstract

Objective—To compare general practitioners' reported management of acute back pain with "evidence based" guidelines for its management.

Design—Confidential postal questionnaire.

Setting—One health district in the South and West region.

Subjects—236 general practitioners; 166 (70%) responded.

Outcome measures—Examination routinely performed, "danger" symptoms and signs warranting urgent referral, advice given, and satisfaction with management.

Results—A minority of general practitioners do not examine reflexes routinely (27%, 95% confidence interval 20% to 34%), and a majority do not examine routinely for muscle weakness or sensation. Although most would refer patients with danger signs, some would not seek urgent advice for saddle anaesthesia (6%, 3% to 11%), extensor plantar response (45%, 37% to 53%), or neurological signs at multiple levels (15%, 10% to 21%). A minority do not give advice about back exercises (42%, 34% to 49%), fitness (34%, 26% to 41%), or everyday activities. A minority performed manipulation (20%) or acupuncture (6%). One third rated their satisfaction with management of back pain as 4 out of 10 or less.

Conclusions—The management of back pain by general practitioners does not match the guidelines, but there is little evidence from general practice for many of the recommendations, including routine examination, activity modification, educational advice, and back exercises. General practitioners need to be more aware of danger symptoms and of the benefits of early mobilisation and possibly of manipulation for persisting symptoms. Guidelines should reference each recommendation and discuss study methodology and the setting of evidence.

Introduction

Back pain is one of the commonest conditions managed in primary care, responsible each year for about 12 million general practitioner consultations, over 50 million work days lost, and almost £500m costs to the NHS.¹ Few management strategies for back pain have been proved in primary care, partly because most cases settle within a few weeks.²

Given that most episodes of back pain settle with minimal intervention it is particularly important that clinical guidelines promote proved interventions and also help identify individuals with serious disease who need referral. Guidelines should be feasible and based on perspectives and evidence relevant to the setting in which they will be used.^{3,5} The evidence based Quebec Task Force guidelines⁶ have been influential internationally, and in Britain the Clinical Standards Advisory Group has issued guidelines¹ based on a 1992

literature review and subsequent guidelines from the US Agency for Health Care Policy and Research.⁷ Guidelines for general practitioners have also been issued by the British Association of Chartered Physiotherapists in Manipulation,⁸ and recent reviews have discussed danger signs and management.^{9,10}

Despite the numerous guidelines and reviews now available, it is unclear how most general practitioners assess and manage patients with acute back pain and how their everyday management relates to these guidelines. To inform educational needs, assess current practice, and put the guidelines in a primary care perspective, we need information on the routine management of back pain. We therefore designed a postal questionnaire for general practitioners in the Southampton and New Forest area to determine what routine assessments and advice were given and what signs and symptoms were thought to constitute a need for urgent consultation with a specialist.

Methods

Questionnaire development—The questionnaire for general practitioners was developed to cover three important areas related to how general practitioners spend their time in consultations: (a) what examination is routinely performed (five items), (b) what triggers referral for danger symptoms and signs (eight items),^{1,7-10} and (c) what advice is given about everyday activities (seven items)—that is, 20 items in three questions. The questionnaire was piloted and tested for reliability (by repeat mailing after two weeks) with 31 general practitioners (25 responded to both requests) who did not take part in the main study. Some items had to be changed during piloting because of ambiguity. Also the "danger signs" question was changed to a closed format since very few items were mentioned in the open format. For these items reliability could be tested in only 11 respondents. Questions were omitted when management was uncontroversial—for example, analgesia—or dependent on other factors—for example, bed rest depending on severity of pain and spasm and nerve root involvement. For the danger signs question, danger signs were mixed up with other symptoms and signs to avoid a predictable order.

Sample size—We estimated that 150 respondents would allow proportions to be estimated with 95% confidence intervals for proportions of 5% (0% to 10%), 10% (4% to 16%), and 20% (13% to 27%) responses respectively.¹¹ Assuming a response rate of 66% we estimated that a minimum of 225 general practitioners would have to receive the questionnaire.

Setting—Addresses of general practitioners were obtained from the family health services authority for one Southampton health district. The urban or rural nature of each practice was assessed by using the Office of Population Censuses and Surveys classification.

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Altogether 236 general practitioners were mailed the questionnaire—the pilot practices and a university practice (possibly atypical) were excluded.

Mailing—A second mailing to non-responders was done after two weeks.

Analysis—Data were entered and analysed with SPSS, and 95% confidence intervals were calculated with CIA.¹¹ The percentage agreement and κ coefficients were calculated to assess the reliability of the questions based on 25 respondents—or 11 respondents for question items that were changed during piloting.

Results

Reliability—Comparing the responses to the questions on the two occasions showed that most items (17 out of 20 items in the three questions) were reliable (79% (> 19/24) agreement, $\kappa > 0.58$). Responses for the remaining three items—sitting (advice question), palpation of the spine (examination question), and constant pain at night (danger signs question)—agreed reasonably well (76%, 88%, and 73% agreement respectively; or up to about 25% disagreement), but the κ coefficients were low (0.26, 0.33, 0.23 respectively) since the responses were polarised with high expected agreement (most general practitioners gave advice regarding sitting and examined the spine, and few thought constant night pain a danger sign).

Main study—The results from the 166 (70%) general practitioners who responded to the questionnaire are summarised in tables 1–3: fractions are those responding “no” out of the total responding “yes” or “no” to each question. Many general practitioners do not perform some aspects of examination (table 1), a minority would not refer for probable danger signs^{17–19} (table 2), and many do not give advice about back exercises, fitness, or daily activities (table 3). Two thirds (65%) of the general practitioners surveyed had a consultation interval of 10 minutes or more, and 86% of eight minutes or more. A minority treated patients with acupuncture (9/159; 6% (95% confidence interval 3% to 11%)), and a considerable minority used

Table 3—Number and percentage of general practitioners who did not give specific advice on daily activities

Advice	No (%; 95% confidence interval)
Sleeping/mattress	15/163 (9; 5 to 15)
Driving	56/164 (34; 27 to 41)
Back exercises	68/163 (42; 34 to 49)
General fitness	53/158 (34; 26 to 41)
Sitting	28/162 (17; 12 to 23)
Lifting	5/164 (3; 1 to 7)
Gardening	76/158 (48; 40 to 56)

manipulation (33/163; 20% (14% to 26%)). One third of general practitioners (55/165) rated satisfaction with their back pain management as 4 out of 10 or less on a visual analogue scale (totally unsatisfied=0, totally satisfied=10), and a similar number (61/165) rated it as 6 out of 10 or more; the median satisfaction score was 5.1 out of 10.

Non-response—There were no obvious differences between responders and non-responders in the number of practice partners (median five for both), being in a training practice (48% and 47% respectively), or location (wholly urban practices 72% and 64% respectively).

Discussion

This paper documents general practitioners' reported management of patients with acute back pain in a single health district. The results cannot obviously be explained by the types of practice or an unduly short consultation interval (86% of general practitioners had a consultation interval of eight minutes or more), by the distance from a referral centre (most practices were within 15–25 km of the teaching hospital), or by local protocols (we are aware of no local back pain protocols for primary care from rheumatologists, orthopaedic surgeons, or neurosurgeons).

The answers are of self reported behaviour: although general practitioners were assured of confidentiality and asked for their normal management, the answers may be a more idealised version of practice than in fact takes place. Also the 70% of general practitioners who responded are probably the most interested in back pain. Thus the results may underestimate the true discrepancy with guidelines.

This study suggests that for many general practitioners the management of back pain does not conform to guidelines.^{1–6,8} However, guidelines cover many aspects of care. A mismatch between routine practice and guidelines might imply that routine practice is inappropriate, that the guidelines are inappropriate, or a combination of the two. Interpretation of the mismatch depends on the strength of the evidence, the feasibility of the advice, the opportunity costs of following the guidelines, and the potential dangers of not following them. For each area of mismatch these issues must be considered.

HISTORY AND EXAMINATION

Guidelines emphasise the importance of a careful history and physical examination, concentrating on neurological deficit,^{1,6,7} yet many general practitioners do not perform a full examination. If general practitioners are going to use guidelines they must be satisfied that the guidelines are based on good evidence gathered in primary care and can be applied sensibly in that setting.

The Agency for Health Care Policy and Research and the Clinical Standards Advisory Group cite a review of the evidence¹²: much of this relates to hospital case series or patients from “walk in” clinics with

Table 1—Number and percentage of general practitioners who said they did not routinely test the following in a first examination of a patient with acute low back pain

Examination	No (%; 95% confidence interval)
Straight leg raise	16/163 (10; 6 to 15)
Reflexes	44/161 (27; 20 to 34)
Muscle weakness	92/156 (59; 51 to 67)
Sensation	88/158 (56; 48 to 63)
Palpation of spine	7/156 (4; 2 to 9)

Table 2—Number and percentage of general practitioners who said they did not think the following signs and symptoms justified immediate hospital advice for a patient with acute low back pain

	No (%; 95% confidence interval)
Probable danger signs:	
Saddle anaesthesia	10/157 (6; 3 to 11)
Neurological signs at multiple levels	24/159 (15; 10 to 21)
Extensor plantar response	67/150 (45; 37 to 53)
Possible danger signs:	
Constant night pain	103/150 (69; 61 to 76)
Bilateral leg signs	73/157 (47; 39 to 54)
Probably not danger signs:	
Severe local back pain	144/156 (92; 87 to 96)
Loss of reflex at one level	136/152 (89; 85 to 94)
Unilateral sciatic symptoms below the knee	148/152 (97; 93 to 99)

relatively high rates of serious disease, sometimes with few cases (for example, 13 cases of cancer in one series), leaving doubts about the accuracy and generalisability of this evidence. Of every 1000 patients seen in British general practice with back pain only one is likely to have malignancy and only one an inflammatory disorder.¹³ Thus, unless features of history and examination are very specific, a full history and examination in all patients presenting to a general practitioner with back pain will have a low predictive value and considerable opportunity cost.

From a study in a primary care cohort, Roland suggested that a brief history and assessment of straight leg raising should be performed and that a more complete history and examination provided little further prognostic information.¹⁴ More recent primary care evidence confirms this and even suggests that straight leg raising has little prognostic value.²

If examination is essential for assessment—that is, there is no discretion based on history—then should patients who consult by telephone or even those who do not consult^{15 16} be asked to attend for examination? This would medicalise the problem further and increase general practitioners' workload. Thus there is a mismatch between guidelines and routine practice, but it is not clear that routine practice is inappropriate.

DANGER SIGNS

A minority of general practitioners are apparently not aware of, or would not refer for some danger symptoms or signs. This finding suggests the need to disseminate information in primary care about danger symptoms and signs for the neurological conditions emphasised by the Clinical Standards Advisory Group: cauda equina syndrome, widespread neurological disorder, progressive neurological signs.¹ However, it also raises the questions of whether guidelines agree about danger symptoms and signs and how common and dangerous these are in primary care.

If we take constant night pain as an example then its inclusion as a danger symptom and description varies between sources: constant night pain,¹⁰ constant unremitting pain in atypical sites,⁹ severe night pain,⁸ bed rest with no relief,⁷ and constant, progressive, non-mechanical pain.¹ In an American hospital walk in clinic "bed rest with no relief" had a specificity for cancer of 0.46.^{7 12} In a primary care cohort 16% had "constant night pain," which was not associated with delayed recovery²—that is, it is a common and not very predictive symptom.

To inform management in general practice we need similar information for other danger symptoms and better estimates of the risk from large case-control studies. However, the limited evidence from primary care has to be balanced against the potential dangers, so in this area of mismatch between routine practice and guidelines we support the Clinical Standards Advisory Group's guidelines.¹

EDUCATIONAL ADVICE, EXERCISES, MANIPULATION

Many general practitioners do not give educational advice about daily activities, back exercises, or physical fitness, and 20% perform manipulation. In contrast, the Clinical Standards Advisory Group supports educational advice, activity modification, early mobilisation, aerobic exercise, and arranging physical therapy (manipulation or exercises) if symptoms persist after a few days.¹ Nevertheless, there are several general problems in assessing the trial evidence from guidelines: guidelines may not reference the evidence for each recommendation, the setting of studies is often not discussed (with problems of generalisability), and the methodological quality may not be discussed: although there are limitations of

Key messages

- Several sets of guidelines have been issued on managing acute back pain
- It is unclear, however, to what extent these guidelines are followed in general practice, where most episodes are managed, and where most cases settle within a few weeks
- The study shows that management of back pain by general practitioners does not match the guidelines, in that most do not routinely perform some recommended examinations and several do not give advice about exercise or everyday activities. In particular some neglect danger signs
- Many of the guidelines' recommendations, however, are not based on evidence from general practice. More research based in general practice is needed, and guidelines should clearly reference the evidence for each recommendation

scoring systems,¹⁷ most back pain trials have low scores for their methodology.¹⁸

More specifically, what is the evidence for each recommendation? Trials—mainly not in general practice—suggest that, unless there is nerve root compression, bed rest is unhelpful and normal activities beneficial.¹⁹⁻²² Manipulation is supported by two systematic reviews of studies mainly based outside general practice and some further evidence from primary care.²³⁻²⁵ Nevertheless, it is unclear whether manipulation by general practitioners is equivalent to manipulation by other therapists. There is also doubt about which groups benefit²⁴ and doubts about the feasibility and cost effectiveness of manipulating the many patients with persisting symptoms "after a few days."^{1 26} Physiotherapy exercises are not supported by a systematic review of randomised trials of diverse regimens,²⁷ and there are inconsistent results from recent well conducted trials in primary care.^{25 28 29} Aerobic exercise has numerous health benefits,³⁰ and trials since the systematic review²⁷ support supervised aerobic and back strengthening exercises for chronic pain³¹⁻³⁵—consistent with a review of "active exercise" trials.^{36 37}

Nevertheless, there are many doubts about exercise: about the setting and quality of trials,¹⁸ about the benefits "after a few days" for acute back pain,¹ about long term effectiveness and cost effectiveness,³⁷ about the precise regimen, and about whether general practitioner advice alone is effective.

On everyday activities, the Quebec Task Force advocated giving advice, despite mixed evidence.^{6 38-40} The Agency for Health Care Policy and Research acknowledged weak evidence for modifying activity but supported educational advice,⁷ citing two trials.^{41 42} Only one of these trials was in primary care and showed that a leaflet modestly reduced the number of follow up consultations.⁴² Thus, although there is a mismatch between guidelines and practice, there is little to support recommendations to general practitioners to give educational advice or advice about activity or back exercises. With reservations, evidence supports early mobilisation in uncomplicated cases, considering arranging manipulation for persisting symptoms, and possibly arranging aerobic and back strengthening exercises in patients with chronic pain.

In conclusion, there are mismatches between guidelines and routine general practitioner assessment and management of back pain. The poor methods of many studies and limited evidence from primary

care make interpretation of mismatches difficult and require judgments based on the strength of the evidence in different settings, feasibility, and potential dangers. There is little evidence to support many guideline recommendations about what general practitioners should do, including routine examination, educational advice or advice on activities advice, and back exercises. General practitioners should probably be more aware of danger symptoms, advise patients with uncomplicated back pain to mobilise themselves early, and, with some reservations, consider arranging manipulation for persisting symptoms. Guidelines should be audited: standards should include accepted criteria,^{3,5} discussion study methodology and the setting of evidence, and clear referencing of recommendations. More research based in general practice is needed to inform general practitioner assessment and management of back pain.

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Explaining variations in general practice prescribing costs per ASTRO-PU (age, sex, and temporary resident originated prescribing unit)

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In the light of evidence which suggests that the use of medicines is in some degree predictable from the demographic structure of practice populations,¹ a move has been made towards the use of a weighted capitation formula in determining general practitioners' prescribing budgets. One recently devised weighting structure, the age, sex, and temporary resident originated prescribing unit (ASTRO-PU), allocates individual weightings to nine age groups for

each sex, plus one for temporary residents, in the practice list.² Family health services authorities were advised that they might use weightings based on ASTRO-PU to adjust the prescribing allocations, otherwise based on historic costs, for the financial year 1994-5.³

Over and above a budgetary allocation so determined, scope will always exist for discretionary or "soft" factors, reflecting particular patient need in individual practices.⁴ Evidence on what should be considered as genuine soft factors, however, is not readily available. We report a study of prescribing variations in a single English health authority, with a view to identifying factors influential in determining prescribing costs per ASTRO-PU.

Methods and results

Data on a wide range of general practice characteristics were available for 99 out of the 108 practices in Lincolnshire for 1993. Multiple regression analysis of the data was performed with prescribing cost per

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