

GP management and referral of low back pain:

A Delphi and evidence-based study

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ABSTRACT

Background

Numerous evidence-based guidelines on low back pain management have been produced but specific conditions for general practitioner (GP) referral are not always specified.

Aim

Literature review and expert consultation to determine best management circumstances and timing of referral to other health practitioners.

Method

Multi-disciplinary panel underwent two-round Delphi consultation assessing their opinions and degree of agreement to evidence-based statements.

Results

Conservative treatment should include information about low back pain; reinforcement of positive expectations; education about self-management and self-responsibility, pain management and control and increase in exercise toler-

ance. NSAIDs, muscle relaxants and manipulation should be considered if there is no radicular pain. Referral for steroid epidural injections, TENS, acupuncture, traction and lumbar support should be avoided. Clinically severe nerve impingement requires referral to orthopedic surgeons. There was consensus that referral should occur if no improvement after six weeks and certainly after 12 weeks. To whom GPs should refer is not clear.

Conclusion

Where there is good evidence there is usually a consensus regarding management and referral for back pain, for example no or limited referral for acute pain. Where there is no or equivocal evidence then clinical judgement for individuals is needed. More randomised controlled trials are required to elucidate the best persons to whom GPs should refer patients with subacute or chronic back pain.

Key words

Low back pain, Delphi technique, referral and consultation

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Introduction

In the past few decades low back pain has been the subject of considerable research, the results of which have been presented in a number of systematic reviews including Cochrane Library reviews. Comprehensive guidelines on low back pain management have been produced internationally, based both on review and analysis of the scientific literature and on expert opinion. The first major review was the Canadian Quebec

Task Force in 1987,¹ followed by the Agency for Health Care Policy and Research (AHCPR) Clinical Guide to Acute Low Back Problems in Adults published in 1994.² The AHCPR guide served as a foundation for a number of other guidelines produced in various parts of the world, including Canada,³ the UK,^{4–7} the Netherlands,⁸ Australia⁹ and New Zealand.¹⁰

While guidelines cover many aspects of best practice in acute low back pain management, they do not always

specify under which conditions general practitioners (GPs) should manage cases themselves, and when they should consider referring the patient on to other professionals.

Simple backache should be differentiated from nerve root (radicular) pain and possible serious spinal pathology. The vast majority of low back pain is non-specific, self-limiting pain of musculoskeletal origin.¹¹ Radicular pain is located in the lumbosacral region, and may extend to

one or both buttock(s) and thigh(s) and to below the knee. The pain ranges from mild to severe and varies with physical activity. Less than 5% of patients with low back pain will have nerve root pain, commonly caused by peripheral nerve root compression from intervertebral disk protrusion, less commonly from intraspinal tumour, abscess or haematoma. In most cases nerve root pain stems from a single nerve root. Involvement of more than one nerve root increases the likelihood of a more widespread neurological condition. A number of physical risk factors ('red flags') suggest the presence of serious spinal pathology – infection, carcinoma or trauma.¹¹

Management decisions also vary depending on whether low back pain is acute (less than four to six weeks duration), subacute (between six and twelve weeks) or chronic (greater than twelve weeks). Evidence suggests that about 80% of acute non-specific low back pain resolves spontaneously irrespective of management, but 20% progresses to chronic back pain, presenting complex psychosocial and occupational problems.¹²

The aim of our study was to review the literature and consult with leading New Zealand experts in the field on aspects relating to GP management of low back pain, specifically practical advice for GPs about circumstances and timing when it is appropriate, or necessary, to refer patients with low back pain, both acute and chronic, to other health practitioners, in particular physiotherapists, musculoskeletal physicians (GPs with post-graduate training in musculoskeletal medicine), orthopaedic surgeons, rheumatologists and other manual therapists such as chiropractors, osteopaths.

Method

This study involved a literature review and a two-round consultation process with a four-teen-member multi-disciplinary Delphi panel. The full methodology is outlined in our paper *Recommendations for GPs regarding imaging with respect to low back pain: a modified Delphi and evidence-based study* published in this issue of the *New Zealand Family Physician*.¹³

Results

Literature was graded using the SIGN system.* Letters designate the grade of recommendation, from A (meta analysis, systematic review, or directly applicable highly-rated RCT) to D (evidence based on non-analytic studies or opinion). Numbers designate the level of evidence, 1++ being high quality meta analyses through to 4, expert opinion.

There has been considerable research on best practice regarding the management of acute low back pain. Our panel were in complete consensus that in the absence of red flags on initial assessment of acute low back pain, conservative treatment

should be initiated.¹⁴⁻¹⁶ [A1-] Conservative measures include patient education,¹⁷ [A1-] encouraging normal activities as tolerated,^{15,16,18}

[A1++] encouraging patient mobilisation and frequent change of position,^{16,18,19} [A1++] and discouraging bed-rest.¹⁹⁻²¹ [A1+] There appears to be strong evidence that avoiding bed rest and staying active when suffering from acute low back pain reduces

time off work, chronic disability and recurrence.¹⁸

Evidence is lacking that specific exercises are effective in the treatment of acute back pain, although some panellists still supported these. Most agreed that some exercise programmes [A1] might be effective in chronic low back pain.²²⁻²⁴

Seventy-nine per cent (11/14) agreed that there is evidence that back schools [D3] may be effective for patients with recurrent and chronic low back pain in occupational settings (as opposed to patients from the general population).^{25,26}

There is currently no scientific evidence to support the use of hot packs nor the use of ice as a treatment modality for acute low back pain. However several panel members felt that these treatments may have value.

All but one member agreed that lumbar support appears to be of little value. A systematic review found moderate evidence that for primary prevention lumbar supports are not more effective than other types of treatment or no intervention. No evidence was found on the effectiveness of lumbar supports for secondary prevention. The systematic review of therapeutic trials showed that there is limited evidence that lumbar supports are more effective than no treatment.²⁷

Similarly, all but one agreed that referral for traction is not indicated as traction has not been shown to be an effective form of treatment for low back pain. A systematic review of the efficacy of traction for back pain found a paucity of good quality studies precluded conclusions as to whether traction for low back pain

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* Scottish Intercollegiate Guidelines Network (SIGN) revised grading system for recommendations in evidence-based clinical guidelines, found at: <http://www.show.scot.nhs.uk/sign/guidelines/fulltext/50/index.html>

is an effective form of treatment, or more efficacious than other treatment modalities.²⁸ A more recent trial which overcame many of the common flaws of earlier studies did not support the claim that traction [C3] is efficacious for patients with low back pain.²⁹

There was consensus that there is currently no strong evidence that referral for massage therapy [B] is effective a form of treatment for non-specific acute, sub-acute or chronic low back pain.³⁰

Similarly, there is limited evidence that epidural steroid injection [D3] can be effective for acute low back pain with radicular pain and neurologic deficit.³¹ Acupuncture [D3] has not been shown to be effective in the management of low back pain in a recent systematic review.³² There is no evidence that transcutaneous electrical nerve stimulation (TENS) [D3] is an effective treatment for acute low back pain,¹⁶ but some limited evidence that it may reduce pain and improve range of motion in chronic back pain patients.³³

Again, the panel were divided regarding the effectiveness of these forms of treatment and, in the opinion of some, these modalities might be effective in selected subgroups of acute and chronic low back pain.

In general, spinal manipulation has not been shown to be more effective than other interventions in treating low back pain. There is limited evidence that manipulation is more effective than placebo for acute low back pain.¹⁶ The efficacy of spinal manipulation has not been demonstrated with sound RCTs, although there are some indications that manipulation might be effective in some subgroups of patients with low back pain.³⁴ Similarly, a systematic review of RCTs did not provide convincing

evidence for the effectiveness of chiropractic for acute or chronic low back pain.³⁵ A subsequent RCT found that patients receiving either chiropractic manipulation or physical therapy [B] for acute low back pain had only marginally better outcomes than those patients who received only an educational booklet.³⁶

All but one of the panellists were of the opinion that manipulation can be effective in treating low back pain,

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at least in a subgroup of patients. However there was no consensus amongst panel members as to which treatment providers should provide manipulation. Panellists (understandably)

tended to favour their own speciality, but generally they agreed that manipulation should only be undertaken by suitably and adequately specifically-trained professionals. Providers could therefore include medically trained professionals (GP with training in manipulation, musculoskeletal physician, orthopaedic surgeon, rheumatologist), physiotherapist or other treatment provider for whom manipulation has been a primary focus of their training, including chiropractor or osteopath. Some panel members felt that membership of the national register of osteopaths is an adequate qualification, although the different schools of chiropractors means there is no equivalent uniform standard. Others were of the opinion that osteopaths and chiropractors may not be adequately trained or qualified to conduct manipulation for low back pain.

All but one panellist agreed that lumbar manipulation is safe in patients with low back pain with no symptoms of radicular pain.³⁷ Half felt that manipulation is not safe, however, when there are symptoms of radicular pain. Some differentiated between high velocity thrust, which

they considered inappropriate in the presence of radicular pain, with other more gentle forms of manual therapy. Some practitioners also differentiated between radicular pain and myofascial ('pseudo-radicular') pain, the latter they believed as being amenable to manipulation therapy.

Eighty-six per cent of the panel (12/14) agreed that non-steroidal anti-inflammatory drugs (NSAIDs) appear to be effective for short-term symptomatic relief in patients with uncomplicated low back pain, but less effective or ineffective in patients with low back pain with radicular pain. There does not seem to be a specific type of NSAID [A1-] which is clearly more effective than others.^{38,39}

The literature indicates that there is strong evidence that muscle relaxants can be effective for acute low back pain although selection criteria for prescribing are unclear. A range of agents have been trialled including diazepam, orphenadrine, dantrolene and baclofen. There is limited evidence of the effectiveness of muscle relaxants [A+] in chronic low back pain.^{16, 40, 41} The panel varied considerably in their opinion regarding the possible value of muscle relaxants.

With respect to surgical interventions, all agreed that if cauda equina syndrome is found at initial assessment, the patient should be referred to an orthopaedic or spinal surgeon immediately.² Similarly, all agreed that spondylolisthesis that is accompanied by neurological symptoms should be referred to a surgeon.^{42,43}

In acute low back pain, referral to a primary therapy provider for conservative measures is of benefit and may lead to reduced spine surgery rates. A case study found referral to spine surgeons reduced by 50%, and spinal surgery rates by 35%, after primary care doctors were educated regarding appropriate low back pain evaluation and management.⁴⁴ One panellist disagreed with this. Several respondents, particularly physiotherapists, made the comment

that physiotherapists are better placed than GPs to provide conservative management.

All panellists agreed that, within the first three months, only patients with possible serious spinal pathology or severe debilitating symptoms of specific nerve root compromise (with physiological evidence corroborated by radiological studies) are likely to benefit from surgery,^{45,46} but patients who still have unremitting low back pain after six weeks should be referred to a specialist.⁴⁷ There was no consensus as to what sort of specialist, and suggestions included manipulative physiotherapist or manual therapists (for example, chiropractors, osteopaths), musculoskeletal physician, orthopedic surgeon, neurosurgeon, rheumatologist with specific interest in pain management, or an occupational health physician. Again, panellists tended to favour their own disciplines.

All but one agreed that persistent radicular pain symptoms with clear evidence of clinically severe nerve root impingement (with or without confirmatory studies of disc herniation using MRI or CT scanning) should be referred to a surgeon after four to six weeks if symptoms have not settled with conservative treatment.^{42, 46-48}

The primary rationale for surgery for disc prolapse is to relieve nerve root irritation or compression due to herniated disc material.⁴⁹ A review of patient outcome following lumbar discectomy for sciatica found that the length of preoperative sick leave had a significant effect on all outcome measures of function, pain, ability to return to full time work and current compensation status, and those patients who had more than six months sick leave prior to opera-

tion were less likely to have a favourable outcome.⁵⁰ Irrespective of surgery, 80% of patients with sciatica will eventually recover.⁴⁵ There is considerable evidence on the clinical effectiveness of discectomy for carefully selected patients with sciatica caused by lumbar disc prolapse that fails to resolve with conservative management, particularly if carried out within six months of the onset of nerve compression.⁵¹ All but one panellist agreed to these statements. All but one agreed that there is no scientific evidence on the effectiveness of any form of surgical decompression or fusion for degenerative lumbar spondylosis compared with natural history, placebo, or conservative management.⁴⁹

While there was considerable panel agreement regarding appropriate management of low back pain, the panel was very mixed in regard to who should provide treatment and when and to whom patients should be referred. Eight of the panel (57%) felt that in all cases of acute low back pain with no significant past history and no symptoms of radicular pain, GPs should initiate appropriate conservative treatment and not refer the patient on at this stage.

Others advocated that, unless a GP was trained and experienced in manipulation, they should refer acute low back pain immediately to a

trained manual therapist (ranging from a specifically-trained physiotherapist to a musculoskeletal physician to an osteopath).

Similarly, the response was mixed with respect to GP management of acute low back pain

with no significant past history but where there are symptoms of radicular pain. Again, 57% (8/14) felt that GPs should initiate appropriate con-

Key points

- In the absence of 'red flags' on initial assessment of acute low back pain, conservative treatment should be initiated.
- Conservative measures include patient education, encouraging normal activities as tolerated, encouraging patient mobilisation and frequent change of position, and discouraging bed-rest.
- GPs can consider NSAIDs and muscle relaxants and consider manipulation if there is no radicular pain. They should avoid referral for steroid epidural injections, TENS, acupuncture, traction and lumbar support.
- Patients who still have unremitting low back pain after six weeks should be referred to a specialist.

servative treatment and not refer the patient on at this stage. Some advocated immediate referral to physiotherapy. An alternative opinion was that most will settle within a month of onset and that physiotherapy might 'keep activating the symptoms'. Referral to an orthopaedic surgeon, musculoskeletal physician or other manual therapist was also advocated. Again the comment emerged that while many GPs can easily initiate an appropriate programme, others may not have the training or expertise and patients might be better managed by the appropriate referral.

Where the low back pain was sub-acute (persisting after four to six weeks of conservative therapy) and uncomplicated, all but one of the panellists recommended referral by the GP for further assessment and management. There was again no consensus on the type of provider to refer to, ranging from physiotherapist, musculoskeletal physician, rheu-

A review of patient outcome following lumbar discectomy for sciatica found that... those patients who had more than six months sick leave prior to operation were less likely to have a favourable outcome

matologist, orthopaedic surgeon, to other treatment provider (including multidisciplinary team; psychologist).

In cases of sub-acute low back pain with radicular symptoms, all agreed on GP referral, with more favouring referral to an orthopaedic surgeon. Again, all but one panellist favoured GP referral of chronic (present for over 12 weeks) uncomplicated low back pain, with a similar mix of possible secondary providers. In cases of chronic low back pain with symptoms of radicular pain, all agreed that GPs should refer the patient to another health professional for more specialised care. Here there was still a range of opinions as to which health professional. Most felt that a surgical referral (orthopaedic, spinal or neuro-) was warranted at this stage, although several physiotherapists did not advocate this and were of the opinion that the most appropriate referral was likely to be to a physiotherapist or musculoskeletal physician. The decision would also be influenced by what health professionals, if any, the patient had already consulted. Some emphasised the importance of exclud-

ing or managing medically important causes and identifying possible biopsychosocial factors.

Discussion

In general our study has shown that where there is good evidence there is usually a consensus on management and referral for back pain. Where there are grey areas (no evidence or equivocal evidence) then clinical judgement for individuals is required.

The management of low back pain is multi-faceted and complex. Where there is strong evidence regarding specific interventions, our panel were largely in agreement – for example that conservative treatment should include information and advice about low back pain; reinforcement of positive expectations; education about self-management and self-responsibility, pain management and control and increase in exercise tolerance.

GPs can consider NSAIDs and muscle relaxants and consider manipulation if there is no radicular pain. They should avoid referral for steroid epidural injections, TENS, acupunc-

ture, traction and lumbar support. Clinically severe nerve impingement requires referral to an orthopaedic or neuro-surgeon. There was a consensus that referral should occur if no improvement after six weeks and certainly after 12 weeks. To whom GPs should refer is not clear.

For patients with subacute or chronic back pain this lack of clarity was demonstrated by the variable response as to when GPs should refer on patients, and to whom. Where evidence is sparse or contradictory, GPs must rely more on their own clinical experience and judgement as to what intervention is likely to be in the best interest of a specific patient. More randomised controlled trials are required to elucidate the best person to whom GPs should refer such patients.

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