



**INSTITUTE OF  
HEALTH ECONOMICS**  
ALBERTA CANADA

# **EPIDURAL INJECTIONS FOR NEUROPATHIC PAIN**

**ADDENDUM TO SUMMARY OF THE LITERATURE**

**Canadian Pain Society Special Interest Group on  
Neuropathic Pain**

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## **SCOPE OF THE ADDENDUM**

This addendum was prepared in response to a request from the Canadian Pain Society Special Interest Group on Neuropathic Pain (NeP SIG) to broaden the inclusion criteria for clinical practice guidelines, with the aim of making the evidence-base more clinically relevant.

This addendum was conducted according to a predefined methodology that was formulated in consultation with NeP SIG representatives. It does not represent a systematic review of the literature on epidural injections for the treatment of neuropathic pain; thus, no firm conclusions are offered on the safety or effectiveness of this intervention. In addition, the evidence was only summarized and no attempt was made to assess the veracity of the information contained within the included guidelines.

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## METHODS

### Modification to the inclusion criteria

#### *Participants*

In the original document, data were collected on adult patients (18 years of age or older) with a peripheral or central neuropathic pain condition of any duration. However, given the dearth of clinically useful guidelines on the use of epidural injections for neuropathic pain, this inclusion criterion was broadened to include patients of any age with a peripheral or central neuropathic pain condition of any duration.

## SUMMARY OF ADDITIONAL GUIDELINES

Two additional clinical practice guidelines (CPGs) were included as a result of removing the age limit on patients included in CPGs (Table 1). Study profiles of the included CPGs are summarized in Table 2. The relevant recommendations from each of the included CPGs are provided in Table 3.

**Table 1: Summary of additional included guidelines**

Study	Year	Quality Rating	Pain Condition
Netherlands Society of Rehabilitation Specialists and the Netherlands Society of Anaesthesiologists <sup>1</sup>	2006	Good (25.5/28)	Complex regional pain syndrome type I
New Zealand Accident Compensation Corporation <sup>2</sup>	2005	Good (23.5/28)	Persistent non-cancer pain

## STUDY PROFILES – CLINICAL PRACTICE GUIDELINES

Table 2: Study profiles for *clinical practice guidelines* on epidural injections for neuropathic pain

Guideline	Target Population	Selection Criteria/Outcomes	Methods
<p>Netherlands Society of Rehabilitation Specialists and the Netherlands Society of Anaesthesiologists (2006)<sup>1</sup></p> <p><b>Objective:</b> To achieve uniformity in the diagnosis and treatment in the various centres and to define the contexts in which multidisciplinary care should be provided to patients with complex regional pain syndrome type I (CRPS-I).</p> <p><b>Target users:</b> All medical practitioners involved in treating patients with CRPS-I, such as general practitioners, rehabilitation specialists, rheumatologists, anaesthesiologists, neurologists, paediatricians, surgeons, neurosurgeons, plastic surgeons, orthopaedic surgeons, company doctors, insurance doctors, psychologists, physiotherapists, and occupational therapists.</p> <p><b>Financial support:</b> Order of Medical Specialists in the context of the Evidence-Based Guidelines Development programme.</p> <p><b>Conflict of interest:</b> None. Files available on request.</p>	<p><b>Age:</b> Children and adults.</p> <p><b>Included conditions:</b> CRPS-I.</p> <p><b>Excluded conditions:</b> Not stated.</p>	<p><b>Interventions:</b> Medical, interventional, and surgical treatment.</p> <p><b>Study inclusion/exclusion criteria:</b> Meta-analyses, systematic reviews, randomised controlled trials and controlled trials. When these were not available, comparative cohort, comparative patient control, or non-comparative trials were included. Studies were included if they had adequate size, adequate follow-up, adequate exclusion of selection bias, and the results could be translated to the local context in the Netherlands.</p>	<p><b>Literature search:</b> <u>Time period:</u> 1980 to June 2004. <u>Limits:</u> English, German, French, Italian, or Dutch language publications. <u>Databases:</u> MEDLINE, EMBASE, the <i>Cochrane Library</i>, CINAHL, and PsycINFO. <u>Other sources:</u> Additional reports were identified from manual searches, recent guidelines on CRPS-I, and the reference lists of retrieved studies.</p> <p><b>Appraisal of study quality:</b> Members of the project group assessed the quality of the included studies on the basis of Evidence-Based Guidelines Development assessment forms. Articles of moderate or poor quality were excluded. The remaining included studies were then graded according to their evidential strength.</p> <p><b>Formulation of recommendations:</b> A number of subgroups with representatives of relevant disciplines were set up. A group of core editors was responsible for coordination and consultation between the subgroups. The project group produced texts, either individually or in subgroups, that were discussed at plenary meetings and approved after comments had been taken into account. The plenary project group met ten times to discuss the results of the subgroups. The subgroups' texts were integrated into a single draft guideline by the core editors. These guidelines were presented for comment at a national guidelines meeting. Once the comments had been taken into account, the guidelines were adopted by the full project group and sent to the relevant professional bodies for approval.</p> <p><b>External review:</b> Peer review by relevant professional bodies.</p> <p><b>Evidence linked to recommendations:</b> Yes.</p>

**Table 2: Study profiles for *clinical practice guidelines* on epidural injections for neuropathic pain (cont'd)**

Guideline	Target Population	Selection Criteria/Outcomes	Methods
<p>New Zealand Accident Compensation Corporation (2005)<sup>2</sup></p> <p><b>Objective:</b> To assist health practitioners and consumers make informed decisions in the management of persistent non-cancer pain.</p> <p><b>Target users:</b> Health practitioners and consumers.</p> <p><b>Financial support:</b> Not reported.</p> <p><b>Conflict of interest:</b> Some members of the advisory group who are in clinical practice receive payments from the New Zealand Accident Compensation Corporation for the use of interventional pain management procedures. Some members of the advisory group received fees for providing services to various pharmaceutical companies.</p>	<p><b>Age:</b> People over the age of 12 years.</p> <p><b>Included conditions:</b> Persistent non-cancer pain.</p> <p><b>Excluded conditions:</b> Pain due to malignancy; acute resolving pain such as postoperative pain; childbirth; dysmenorrhoea; dental pain; infection such as postherpetic neuralgia; systemic inflammatory conditions; migraine; angina; other visceral pain; peripheral vascular disease; haematological disorders.</p>	<p><b>Interventions:</b> Infusions, injections, intradiscal electrothermal therapy, nerve blocking procedures, neuroablation, neuromodulation.</p> <p><b>Study inclusion criteria:</b> Systematic reviews; guidelines; randomized controlled trials; quasi-randomized controlled trials; concurrent control and case-control studies with at least 10 participants; case series and cohort studies with at least 50 participants. Case series and cohort studies with fewer than 50 participants were included if they reported on adverse events or safety concerns associated with the intervention in question.</p> <p><b>Study exclusion criteria:</b> Studies that: reported on healthy volunteers or involved experimentally induced pain; did not report pain control or pain relief as a primary outcome; were graded as low quality.</p>	<p><b>Literature search:</b> <u>Time period:</u> See databases. <u>Limits:</u> English language publications. <u>Databases:</u> MEDLINE (1966 to April 2004), EMBASE (1988 to April 2004), PsycINFO (1974 to April 2004), the <i>Cochrane Database of Systematic Reviews</i>, the American College of Physicians Journal Club, the Database of Abstracts of Reviews of Effects, the Cochrane Central Register of Controlled Trials, and the TRIP database. <u>Other sources:</u> Additional reports were identified from manual searches of five journals (January 2003 to April 2004): <i>Spine</i>, <i>The Spine Journal</i>, <i>Clinical Journal of Pain</i>, <i>Regional Anaesthesia and Pain Medicine</i>, and <i>Pain Research and Management</i>. The <i>Journal of Negative Results in Biomedicine</i> and the proceedings of the International Association for the Study of Pain 9th and 10th world conferences were searched for relevant material, as were the reference lists of retrieved studies.</p> <p><b>Appraisal of study quality:</b> Researchers from the New Zealand Health Technology Assessment unit appraised all eligible experimental studies, guidelines, systematic reviews, and health technology assessments using the Generic Appraisal Tool for Epidemiology (GATE) checklists.<sup>3</sup> Observational studies were assessed with an alternative rating system.<sup>4</sup></p> <p><b>Formulation of recommendations:</b> The whole body of evidence for each intervention was considered by the advisory group and clinical practice recommendations were made using a considered judgement form.</p> <p><b>External review:</b> Not reported.</p> <p><b>Evidence linked to recommendations:</b> Yes, for most recommendations.</p>

## SUMMARY OF RELEVANT DATA – CLINICAL PRACTICE GUIDELINES

Table 3: Summary of relevant data extracted from *clinical practice guidelines* on epidural injections for neuropathic pain

Guideline/ Quality Rating	Synopsis of Recommendations	Supporting Evidence*						
		SR/MA	NR	RCT	NRCS	CS	G	Other
Netherlands Society of Rehabilitation Specialists and the Netherlands Society of Anaesthesiologists (2006) <sup>1</sup> (The Netherlands)  <b>Quality rating:</b> Good (25.5/28)	There is insufficient evidence to allow any statement to be made as to the efficacy of local epidural anaesthetic administered to patients with complex regional pain syndrome type I.					1 5		

**Table 3: Summary of relevant data extracted from *clinical practice guidelines* on epidural injections for neuropathic pain (cont'd)**

Guideline/ Quality Rating	Synopsis of Recommendations	Supporting Evidence*						
		SR/MA	NR	RCT	NRCS	CS	G	Other
New Zealand Accident Compensation Corporation (2005) <sup>2</sup> (New Zealand)  <b>Quality rating:</b> Good (23.5/28)	<p><i>Caudal-sacral epidural injections</i></p> <ul style="list-style-type: none"> <li>There is medium quality evidence that epidural caudal/sacral injection of steroid is effective for the treatment of sciatica or radicular pain in the short term (up to 60 days). In some patients there is evidence of modest long-term (up to one year) pain relief (number needed to treat =11).</li> <li>The evidence of short-term effectiveness is reasonably consistent.</li> <li>The procedure was reported to be relatively safe with few, relatively minor, adverse effects. Forceful injections of large quantities of fluid into the epidural space may be associated with more serious adverse effects.</li> </ul> <p>Epidural caudal/sacral injection of steroid may be used for the short-term treatment of sciatica or radicular pain. Where there is no substantial clinical benefit, it is difficult to justify more than three caudal/sacral injections.</p>	5		4		3		
		<p><i>Lumbar epidural injections</i></p> <ul style="list-style-type: none"> <li>There is medium quality evidence that lumbar epidural steroid injection for the treatment of adults with sciatica with or without back pain is effective in the short term (up to 60 days). The evidence on long-term effectiveness is conflicting.</li> <li>Accidental dural puncture and transient blindness have been reported in a small number of cases. Other transient and less serious side effects have also been reported.</li> </ul> <p>Lumbar epidural injection of steroid may be used for the short-term treatment of adults with radiating leg pain (sciatica). There is little evidence to support the use of anaesthetic in addition to steroid in lumbar epidural injection for therapeutic purposes. Where there is no substantial clinical benefit, it is difficult to justify more than three epidural steroid injections.</p> <p><i>(cont'd next page)</i></p>	2 6,7		1 8		1 9	
		References for these studies were not provided						
		22 studies were appraised for safety, but the references were not provided.						

**Table 3: Summary of relevant data extracted from *clinical practice guidelines* on epidural injections for neuropathic pain (cont'd)**

Guideline/ Quality Rating	Synopsis of Recommendations	Supporting Evidence*						
		SR/MA	NR	RCT	NRCS	CS	G	Other
New Zealand Accident Compensation Corporation (2005) <sup>2</sup> (cont'd)	<p><i>Transforaminal epidural injections</i></p> <ul style="list-style-type: none"> <li>• There is medium quality evidence that transforaminal injection of steroid with local anaesthetic is effective for the treatment of adults with sciatica in the short term (up to 12 weeks).</li> <li>• A 2003 guideline document of limited quality made a strong recommendation in favour of transforaminal epidural injection with steroid, which was not supported by the strength of the evidence.</li> <li>• Little safety information was reported. One RCT reported that there were no complications. It was noted in a further study that there were no complications in cases performed under fluoroscopic control.</li> </ul> <p>Transforaminal injection of steroid with local anaesthetic may be considered for the short-term treatment of adults with sciatica. Where there is no substantial clinical benefit, it is difficult to justify more than two transforaminal injections of steroid with local anaesthetic.</p>			5 10,11		4 12	1	
	<p><i>Cervical epidural injections</i></p> <ul style="list-style-type: none"> <li>• There is evidence that cervical epidural steroid and anaesthetic injection is more effective than intramuscular steroid injection for the treatment of adults with cervicobrachialgia.</li> <li>• Effectiveness was reported for up to one year after the injection, with a high recovery of capacity to work in treated patients.</li> <li>• There are several reports of very rare, but serious, side effects from this procedure, including death and quadriplegia.</li> </ul> <p>Cervical epidural steroid and anaesthetic injection is not recommended for the treatment of adults with cervicobrachialgia.</p>			1 13		6 14-19		

\*The integers listed in the Supporting Evidence columns represent the total number of discrete studies. Thus, when there are multiple publications for a single study, the integers are less than the number of references listed below them.

## QUALITY ASSESSMENT RESULTS – CLINICAL PRACTICE GUIDELINES

Table 4: AGREE tool quality assessment results for included clinical practice guidelines (two appraisers)

Guideline Characteristic		Netherlands Society of Rehabilitation Specialists & the Netherlands Society of Anaesthesiologists (2006) <sup>1</sup>		NZ Accident Compensation Corporation (2005) <sup>2</sup>	
Scope/ purpose	1.Objectives	4	4	3	3
	2. Clinical question	3	4	4	4
	3. Target population	4	3	4	3
Stakeholder involvement	4. Relevant professional groups represented	4	4	2	4
	5. Patients' perspectives included	2	2	2	2
	6. Target users defined	4	4	3	2
	7. Piloted among target users	2	4	2	2
Rigour of development	8. Systematic search conducted	4	4	4	4
	9. Selection criteria described	3	4	4	4
	10. Methods used to formulate recommendations described	2	4	2	4
	11. Benefits, side effects, risks considered	4	4	4	4
	12. Link between recommendations and evidence	4	4	4	4
	13. External review by experts	2	4	1	2
	14. Updating procedure described	4	4	3	3
Clarity/ presentation	15. Specific, unambiguous recommendations	4	4	4	4
	16. Different management options presented	1	4	1	4
	17. Key recommendations easily identifiable	4	4	4	4
	18. Additional support materials provided	4	1	1	1
Applicability	19. Organizational barriers discussed	1	1	1	1
	20. Resource implications considered	1	1	1	1
	21. Key review criteria presented	4	3	1	1
Editorial independ- ence	22. Editorially independent from funder	3	4	2	4
	23. Conflicts of interest reported	4	4	4	4
Quality rating	Seven criteria (systematic search, method of formulating recommendations, recommendations-evidence link, external review, clear recommendations, editorial independence, conflict of interest)	25.5 Good		23.5 Good	

**Table 5: AGREE tool standardized domain scores (%) for included clinical practice guidelines (two appraisers)**

<b>AGREE Domain</b>	<b>Netherlands Society of Rehabilitation Specialists &amp; the Netherlands Society of Anaesthesiologists (2006)<sup>1</sup></b>	<b>New Zealand Accident Compensation Corporation (2005)<sup>2</sup></b>
Scope and purpose	89	83
Stakeholder involvement	75	46
Rigour of development	88	79
Clarity and presentation	75	75
Applicability	28	0
Editorial independence	92	83

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