Meeting Date | 29 November 2016
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Topic | Effectiveness of epidural steroid injections via the caudal sacral route (IPM update)

**Purpose**

This purchasing guidance (considered judgement) document accompanies a systematic review commissioned from the International Centre for Allied Health Evidence, University of South Australia. The purposes are to:

1. Carry out an updated review of the effectiveness and safety of epidural steroid injections, with or without local anaesthetic, administered via the caudal sacral route.

2. Make an updated purchasing recommendation on this interventional pain management (IPM) technique.

**Background**

Epidural steroid injections for lower back or leg pain are typically administered via one of three routes: interlaminar, transforaminal or caudal sacral. Caudal sacral is the longest established and is considered to be the safest and easiest of the three techniques. Injections are administered with the patient in a prone position or lying on their side with the hip flexed. Indications for caudal sacral steroid injections include herniated disc, back sprain, sciatica and spinal stenosis.

This work is being carried out to update ACC's 2005 guidance on IPM procedures, which made the following purchasing recommendations:

- Purchase epidural caudal sacral injection of steroid for the short term treatment of sciatica or radicular pain (grade B recommendation supported by fair quality evidence)

- Do not purchase epidural caudal sacral injection of steroid for the treatment of low back pain (grade C recommendation supported by expert opinion only)

1. Effectiveness, Volume of Evidence, Applicability / Generalisability and Consistency / Clinical impact

*Comment here on the extent to which the service/product/ procedure achieves the desired outcomes. Specific reference needs to be made to safety. Report number needed to treat and harm where possible, any issues concerning the quantity of evidence and its methodological quality and the extent to which the evidence is directly applicable or generalisable to the New Zealand population, and the degree of consistency demonstrated by the available evidence. Where there are conflicting results, indicate how the group formed a judgement as to the overall direction of the evidence. Comment on the clinical impact e.g. size of population, magnitude of effect, relative benefit over other management options, resource implications, balance of risk and benefit.*

**Volume & quality of studies:**

The authors included two systematic reviews (SRs), four additional randomised controlled trials (RCTs) and one economic study. The SRs specifically investigated the efficacy of caudal sacral epidural steroid injections and were both of high methodological quality. The RCTs were not covered by the included SRs and were of acceptable to low quality. The economic study was based on data from RCTs.
Purchasing Guidance: Considered Judgement Form

This form is a checklist of issues that may be considered by the Purchasing Guidance Advisory Group when making purchasing recommendations.

Evidence of effectiveness (in terms of pain relief and/or improved function):

One SR (Parr et al 2012) found good evidence that caudal sacral injections are effective in the management of chronic low back and lower extremity pain caused by disc herniation or radiculitis. The evidence for spinal stenosis, axial pain and post-surgery syndrome was less conclusive. There was no significant difference between injection of local anaesthetic with or without steroid.

The second SR (Liu et al 2016) compared steroid injections via the caudal sacral vs. the transforaminal route for treating lumbar sacral radicular pain. It found lower quality evidence that the transforaminal route is more effective in the short term (<6 months) and the caudal sacral route is slightly more effective in the long term (>12 months).

The RCTs found:

- Low quality evidence that (i) all three epidural steroid injection routes are effective for pain and function in patients with lumbar disc prolapse and (ii) the transforaminal route is significantly the most effective (Pandey et al 2016)
- Acceptable quality (but limited volume) evidence that short term improvements in pain & function in patients with lumbar radicular pain are similar with both ultrasound-guided and fluoroscopy-guided caudal sacral steroid injections (Park et al 2013)
- Acceptable quality evidence that, in patients with sciatica, injection with methylprednisolone or triamcinolone + anaesthetic is more effective and safer in the long term than dexamethasone + anaesthetic (Datta & Upadhay 2011)
- Low quality evidence that caudal sacral steroid injections are more effective, less demanding to provide and lower risk than conservative treatment (inc. oral medication & physiotherapy) for low back pain and sciatica (Murakibhavi & Khemka 2011)

Safety:

The SR by Parr et al reported that complications related to caudal sacral epidural steroid injections are rare and usually related to inaccurate needle placement or drug activity.

2. Cost

Where possible and reported in the published research literature any economic analysis of the new treatment is considered. Where possible the following will be considered; total costs of the new intervention and number of claimants likely to be affected are considered, along with comparison with the cost of current treatments or interventions, actuarial assessment of the impact of the intervention on scheme liability (including direct and indirect impact e.g. other services and access), expected “accrued benefit“ in terms of quality of life, longer life or speedier return to the workforce, implications of cost to the wider health sector.

The authors identified a single economic study (Manchikanti et al 2013) which reported the cost utility of caudal sacral epidural steroid injection to be $2,200 per quality adjusted life year (QALY), suggesting it is a cost effective option for the management of low back pain. However, the study did not carry out comparisons with conservative treatment or with other epidural injection techniques.

According to the 2015 IPM service schedule, the unit price for this intervention without imaging (coded IN03) is $537.82 excluding GST. Over the last five years, ACC has funded fairly small numbers of claims for this intervention – around 11 per year with annual costs of $6,000 – $7,000.
The unit price is obviously higher, $873.39 excluding GST, when the intervention is performed under imaging (coded IN07). Claim numbers are also higher; over the last five years, ACC has funded around 19 IN07 claims per year with annual costs of $16,000 - $17,000.

Over the last five years, ACC has therefore funded around 30 caudal sacral injection claims per year with total costs of $22,000 - $24,000 per year.

3. Equity

The extent to which the intervention reduces disparities in health status - in particular equity of access and health outcome. The extent to which the intervention supports the objectives of the Maori access strategy and will encourage access to assessment, treatment and rehabilitation services for those groups where there is evidence of that access is problematic.

There do not appear to be any equity issues associated with this intervention.

4. Consistency with the intent of the AC Act

Purchasing decisions made by ACC must be consistent with and reflect consideration of factors described in the AC Act [Schedule 1, clause 2 (1 and 2)] and these decisions must be defensible against this statutory requirement in respect of individual claimants.

There do not appear to be any consistency issues associated with this intervention.

5. Possible purchasing options

The options are:
1. Purchase,
2. Do not purchase, or
3. Purchase on a case by case basis on the decision of the Manager Corporate Clinical Advice (or equivalent).

6. Evidence statements

Summarise the advisory group’s synthesis of evidence relating to this service, product or procedure, taking the above factors into account, and indicate the evidence level that applies.

Effectiveness:

- Caudal sacral steroid injections appear to be effective in the management of some types of chronic low back pain compared to conservative treatment (level A based on high quality evidence from SRs/RCTs).
- There is conflicting evidence on the efficacy of adding steroid to local anaesthetic. Evidence is limited by a lack of steroid vs. anaesthetic comparisons (level D based on expert opinion & usual practice).

Safety:

- Caudal sacral appears to be the easiest and safest of the three epidural injection routes, although other routes may be more effective. The caudal sacral route should be considered in patients at higher risk of complications, e.g. frail elderly people or those who cannot be safely positioned for other techniques (level A based on high quality evidence from SRs/RCTs).
Caudal sacral epidural injections should be conducted under imaging guidance in order to avoid potential complications such as missing the epidural space (**level A** based on high quality evidence from SRs/RCTs). There is limited evidence from a single small study that there is no difference in outcome between ultrasound and fluoroscopic imaging guidance.

**Cost effectiveness:**

- Caudal sacral steroid injection appears to be a cost effective intervention for the management of low back pain (**level B** based on high/fair quality evidence extrapolated from RCTs).

### 7. Purchasing recommendations

What recommendation(s) does the advisory group draw from this evidence?

Taking recent evidence into account, the group agreed to update and make minor changes to the 2005 purchasing recommendations as follows:

- **Purchase epidural caudal sacral injection to treat chronic low back pain associated with disc herniation or radiculitis/sciatica**
- **Purchase under imaging guidance**
- **Purchase no more than one treatment per client per year**

These recommendations were ratified by the Clinical Governance Committee in January 2017.

### References


