Intravenous regional sympathetic blockade for pain relief in reflex sympathetic dystrophy: a systematic review and a randomized, double-blind crossover study

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Authors' objectives
The primary aim was a systematic review of intravenous regional sympathetic blockage (IRSB) for pain relief in reflex sympathetic dystrophy (RSD). A second aim was a randomised, double-blind, cross-over study to assess the effectiveness of IRSB with guanethidine.

This abstract refers to the systematic review only.

Searching
MEDLINE was searched from 1966 to May 1993. Medical journals selected from a list of 50 journals with the highest number of reports in MEDLINE using the optimization strategy, and 9 specialist journals not indexed in MEDLINE, were handsearched from 1950 to 1992.

Study selection
Study designs of evaluations included in the review
Studies that were randomised and controlled were included.

Specific interventions included in the review
IRSB: guanethidine, droperidol, reserpine, ketanserin, bretylium with or without heparin, and with or without lignocaine. Control agents included bupivacaïne, heparin, normal saline and lignocaine.

Participants included in the review
Patients with chronic pain associated with RSD were included.

Outcomes assessed in the review
The outcomes assessed included: mean daily pain intensity, description of current pain and daily visual analogue scale (VAS) pain, mean pain intensity, mean weekly pain intensity, greater than 50% reduction in VAS pain intensity, duration of VAS relief greater than 30 mm, somatosensory tests and VAS pain intensity (provoked and ongoing).

How were decisions on the relevance of primary studies made?
The authors do not state how the papers were selected for the review, or how many of the authors performed the selection.

Assessment of study quality
The primary studies were assessed using the following criteria: diagnostic criteria, adequacy of wash-out periods, completeness of crossover, blinding of treatment, description of technique, and whether the analysis was based on intention to treat. The authors do not state how the papers were assessed for validity, or how many of the authors performed the validity assessment.

Data extraction
The first author of each eligible study was asked for individual data in relation to analgesic measures, adverse effects and all drop-outs. One author replied.

Methods of synthesis
How were the studies combined?
The studies were combined by a narrative review.

How were differences between studies investigated?
Possible causes of heterogeneity were discussed.

Results of the review
Seven randomised controlled trials (RCTs; 101 patients) were used to assess the effect of IRSB.

Four RCTs (65 patients) were used to assess the effect of guanethidine with one trial (21 patients) using either guanethidine or reserpine.

In addition, one RCT (9 patients) assessed ketanserin and another RCT (21 patients) assessed bretylium.

Two small studies (17 patients in total) showed some advantage of IRSB over control treatments; neither of these studies involved guanethidine.

A report on a randomised, double-blind crossover study, which assessed the effectiveness of IRSB with guanethidine in 9 patients, is included in the review.

Authors' conclusions
The use of guanethidine in IRSB for patients with RSD was not supported by the systematic review or by the double-blind study.

CRD commentary
The value of this review is severely limited by the methodological problems and lack of information of the primary studies. The literature search should have revealed most relevant articles. Information was sought but not obtained from the original authors. The methodology of the included studies was critically assessed and individual data sought. As the authors correctly state, the studies were of small size (ranging from 6 to 21 participants), a variety of drugs were used and the analgesic outcome was measured in a heterogeneous fashion. The authors also comment also on the poorly defined diagnostic criteria, inadequate wash-out periods, incomplete crossover, open administration of treatment, no description of technique and the high proportion of withdrawals with no intention to treat analysis. These flaws would preclude any comment on the results of these trials, including those trials on ketanserin and bretylium.

Implications of the review for practice and research
Well-designed adequately powered RCTs are required to evaluate IRSB in the treatment of RSD. Before subjecting patients to this invasive procedure, an investigation of the reasons for the high drop-out rates, which occurred in the studies included in this review, should be instituted.

Bibliographic details

PubMedID
7536227

DOI
10.1016/0885-3924(94)00064-R

Indexing Status
Subject indexing assigned by NLM

MeSH
Adult; Aged; Aged, 80 and over; Autonomic Nerve Block; Cross-Over Studies; Double-Blind Method; Female; Humans; Injections, Intravenous; Male; Middle Aged; Palliative Care; Reflex Sympathetic Dystrophy /therapy

AccessionNumber
11995000670

Date bibliographic record published
31/03/1998

Date abstract record published
31/03/1998

Record Status
This is a critical abstract of a systematic review that meets the criteria for inclusion on DARE. Each critical abstract contains a brief summary of the review methods, results and conclusions followed by a detailed critical assessment on the reliability of the review and the conclusions drawn.