Resiniferatoxin in the treatment of interstitial cystitis: a systematic review
Mourtzoukou EG, Iavazzo C, Falagas ME

CRD summary
The authors concluded that there was insufficient evidence about the effectiveness of resiniferatoxin in patients with interstitial cystitis, so the effects of resiniferatoxin remain unknown. The review was limited by a restricted search and incomplete reporting of review methods, but overall the authors’ conclusions reflect the limited evidence.

Authors’ objectives
To evaluate the effectiveness and safety of resiniferatoxin for the treatment of patients with interstitial cystitis.

Searching
PubMed and SCOPUS were searched for studies published in English up to May 2007. Search terms were reported. In addition, reference lists of selected studies were screened.

Study selection
Studies of any design that evaluated the effects of resiniferatoxin on lower urinary tract symptoms, urodynamic assessment measures, safety and tolerability for the treatment of adults with interstitial cystitis were eligible for inclusion.

The included studies evaluated single or multiple intravesical installations or prolonged infusion of resiniferatoxin solution (10 to 100nM) in ethanol; in most studies the drug was retained in the bladder for 30 minutes. In all but one study, pre-treatment analgesia (intravesical lidocaine solution) was administered. The control treatment, where this existed, was placebo. Studies used different criteria to diagnose interstitial cystitis. All studies used exclusion criteria; the minimum required duration of symptoms, where reported, ranged from six to 12 months. Most patients were women and a proportion had not responded to traditional medications. Studies assessed pain, changes in voiding patterns, overall symptoms and quality of life and urodynamic measures; studies generally used different methods to measure outcomes. The duration of follow-up was 12 weeks in all but one study with 24 weeks of follow-up.

The authors did not state how papers were selected for the review, or how many reviewers performed the selection.

Assessment of study quality
The validity of RCTs was apparently assessed using the Jadad scale.

The authors did not state how many reviewers performed the validity assessment.

Data extraction
For each study, results were reported as number of improved patients, changes in symptoms with and without levels of statistical significance.

Two reviewers independently extracted data onto a table. Discrepancies were resolved by consensus with the help of a third reviewer.

Methods of synthesis
The studies were grouped by outcome and combined in a narrative synthesis. Some differences between studies were discussed.

Results of the review
Six studies were included (n=225 patients). These included three randomised controlled trials (RCTs, n=203 patients),
two uncontrolled prospective studies (n=17 patients) and one case series (n=5 patients). One RCT had a sample size of 163; in the other studies, the sample size ranged from 4 to 22. The authors stated that two of the RCTs were of good quality but provided no further details.

Unless otherwise stated resiniferatoxin was given as a single instillation.

The largest RCT (n=163 patients) reported no statistically significant difference between a resiniferatoxin and placebo in overall symptoms, pain, nocturia, urgency, frequency and void volume. One smaller RCT (n=22 patients) reported no statistically significant relationship between resiniferatoxin dose and an overall score or symptom index. The other small RCT (n=18 patients) reported that resiniferatoxin was associated with a statistically significant reduction in nocturia and pain at four weeks (p<0.01) and a significant reduction in frequency at four weeks (p<0.01) and 12 weeks (p<0.05).

The uncontrolled studies reported a decrease in bladder pain in two of four patients (one study, n=4 patients), a 58% overall satisfactory improvement rate with significant improvement in pain and quality of life (one study that evaluated multiple instillations, n=13 patients) and a significant reduction in frequency, nocturia and pain (one study that evaluated prolonged infusion, n=5 patients).

Two uncontrolled studies (n=13 and 18 patients) reported no significant change in videodynamic or urodynamic measures.

Serious adverse events were reported in two patients with severe abdominal pain.

**Authors' conclusions**

There was insufficient evidence about the effectiveness of resiniferatoxin in patients with interstitial cystitis, so the effects of resiniferatoxin remain unknown.

**CRD commentary**

The review question was clearly stated and inclusion criteria were defined for intervention and participants. Criteria for outcomes and study design were broad, but this may have been appropriate given the limited information identified. Limiting the search to English language identified in two database plus references may have resulted in the omission of other relevant studies and raised the potential for publication and language bias. Methods were used to minimise reviewer errors and bias in the extraction of data, but it was not clear whether similar steps were taken for study selection. The validity of RCT was apparently assessed but results were not reported adequately. In addition, there was little discussion about the limitations of evidence from small uncontrolled studies. In view of the diversity among studies, a narrative synthesis was appropriate. However, the synthesis generally did not take account of any indicator of study quality such as study design. The review was limited by a restricted search and incomplete reporting of review methods, but overall the authors’ conclusions reflect the limited evidence.

**Implications of the review for practice and research**

**Practice:** The authors did not state any implications for practice.

**Research:** The authors stated that a well-designed multicentre RCT is required to compare the effectiveness and tolerability of different treatments for interstitial cystitis including resiniferatoxin.

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**Bibliographic details**


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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.