TITLE: Chelation Therapy for Heavy Metal Poisoning: Clinical Effectiveness and Guidelines

DATE: 28 May 2010

RESEARCH QUESTIONS:

1. What is the clinical effectiveness of chelation therapy for the treatment of heavy metal poisoning in the emergency department?

2. What are the evidence-based guidelines for the use of chelation therapy for heavy metal poisoning in the emergency department?

METHODS:

A limited literature search was conducted on key health technology assessment resources, including PubMed, the Cochrane Library (Issue 5, 2010), University of York Centre for Reviews and Dissemination (CRD) databases, ECRI (Health Devices Gold), EuroScan, international health technology agencies, and a focused Internet search. The search was limited to English language articles published between January 1, 2005 and May 21, 2010. Filters were applied to limit the retrieval to health technology assessments, systematic reviews, meta-analyses, randomized controlled trials, and guidelines. A controlled clinical trials (CCTs) filter and an observational filter were applied to a focused search (main concepts appeared in title or subject heading) for targeted CCTs and observational studies. Internet links were provided, where available.

RESULTS:

HTIS reports are organized so that the higher quality evidence is presented first. Therefore, health technology assessment reports, systematic reviews, and meta-analyses are presented first. These are followed by randomized controlled trials, controlled clinical trials, observational studies, and evidence-based guidelines.
Two observational studies were identified in the literature search. No relevant health technology assessments, systematic reviews, meta-analyses, randomized controlled trials, controlled clinical trials, or evidence-based guidelines were identified. Additional potentially relevant articles are located in the appendix.

OVERALL SUMMARY OF FINDINGS:

One case series assessed the appropriateness of succimer (dimercaptosuccinic acid or DMSA) as the chelating agent for acute arsenic poisoning in children who ingested ant bait.\(^1\) The authors concluded that prompt chelatation with succimer is recommended in children who have ingested low levels of arsenic. A case report suggested that acute arsenic poisoning can also be treated successfully using conventional therapy with BAL (dimercaprol).\(^2\) However, when large doses of arsenic have been ingested even chelating using conventional therapies along with accompanying extraordinary measures was not sufficient in one patient.\(^2\)

There were no evidence-based guidelines found in the literature search for the use of chelation therapy for heavy metal poisoning in the emergency department. Overall, the evidence was limited regarding chelation therapy in patients with heavy metal poisoning.
REFERENCES SUMMARIZED:

Health technology assessments
No literature identified.

Systematic reviews and meta-analyses
No literature identified.

Randomized controlled trials
No literature identified.

Controlled clinical trials
No literature identified.

Observational studies


Guidelines and recommendations
No literature identified.

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APPENDIX – FURTHER INFORMATION:

Clinical policy bulletin

Note: See Background

Review articles

Note: See TREATMENT AND PREVENTION

Note: See THERAPY

Note: See TREATMENT - Acute poisoning and Chelation

Note: See SEVERE INTOXICATION (≥70 MCG/DL) and Supportive care and Chelation therapy

Note: See Deferoxamine and Dose and duration of treatment

Note: See page 5: Treatment of Metal Toxicity

Additional references

   *Note: See Usage / FDA Approved Indication*

