TITLE: Non-Pharmacologic Pain Management Interventions for Patients with Bleeding Disorders: Clinical Effectiveness and Guidelines

DATE: 10 August 2015

RESEARCH QUESTIONS

1. What is the clinical effectiveness of non-pharmacologic interventions for pain management in patients with bleeding disorders?

2. What are the evidence-based guidelines regarding non-pharmacologic pain management in patients with bleeding disorders?

KEY FINDINGS

Two systematic reviews, one randomized controlled trial, and two non-randomized studies were identified regarding the clinical effectiveness of non-pharmacologic interventions for pain management in patients with bleeding disorders. In addition, one evidence-based guideline was identified regarding non-pharmacologic pain management in patients with bleeding disorders.

METHODS

A limited literature search was conducted on key resources including PubMed, The Cochrane Library, University of York Centre for Reviews and Dissemination (CRD) databases, ECRI, Canadian and major international health technology agencies, as well as a focused Internet search. No filters were applied to limit the retrieval by study type. Where possible, retrieval was limited to the human population. The search was also limited to English language documents published between January 1, 2010 and July 24, 2015. Internet links were provided, where available.

The summary of findings was prepared from the abstracts of the relevant information. Please note that data contained in abstracts may not always be an accurate reflection of the data contained within the full article.
**SELECTION CRITERIA**

One reviewer screened citations and selected studies based on the inclusion criteria presented in Table 1.

| **Table 1: Selection Criteria** |
|-----------------|--------------------------------------------------------------------------------|
| **Population**  | Patients of any age with bleeding disorders (e.g., hemophilia A and B; von Willebrand’s disease; factor II, V, VII, X, XII deficiency) who require acute or chronic pain management in any health care setting |
| **Intervention**| Non-pharmacologic pain management interventions, including, but not limited to:  |
|                | - Physical activity or exercise |  |
|                | - Mindfulness-based therapies  |  |
|                | - Relaxation                    |  |
|                | - Cognitive-behavioural therapy|  |
|                | - Thermal interventions         |  |
|                | - Manual therapies (e.g., massage, physical therapy, chiropractic, joint and tissue mobilization) |  |
|                | - Acupuncture                   |  |
|                | - Transcutaneous electrical nerve stimulation | |
| **Comparator**  | Other non-pharmacologic interventions; Placebo; No treatment; Pharmacologic pain management interventions; Usual care |  |
| **Outcomes**    | Clinical effectiveness, safety and harms (e.g., increased risk of bleeding); Guidelines |  |
| **Study Designs**| Health technology assessments, systematic reviews, meta-analyses, randomized controlled trials, non-randomized studies, evidence-based guidelines |

**RESULTS**

Rapid Response 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, non-randomized studies, and evidence-based guidelines.

Two systematic reviews, one randomized controlled trial, and two non-randomized studies were identified regarding the clinical effectiveness of non-pharmacologic interventions for pain management in patients with bleeding disorders. In addition, one evidence-based guideline was identified regarding non-pharmacologic pain management in patients with bleeding disorders. No relevant health technology assessments were identified.

Additional references of potential interest are provided in the appendix.

**OVERALL SUMMARY OF FINDINGS**

One systematic review examined psychological interventions to help individuals with sickle cell disease deal with their condition. One included study reported a significant reduction in the affective, but not sensory, component of pain with cognitive behavioral therapy.
One systematic review\(^1\) examined the use of physiotherapy for the treatment of hemophilic arthropathy of the ankle and determined that hydrotherapy, strength and balance training, and sports therapy resulted in improvements in movement, pain, balance, and physical performance. The randomized controlled trial\(^3\) compared therapeutic exercise, hydrotherapy, and control on joint complications in patients with hemophilia. Both intervention groups reported a significant reduction in pain levels when compared with the control group and pain alleviation was significantly greater in the hydrotherapy group when compared with therapeutic exercise.

In a cross-sectional study,\(^4\) non-pharmacological pain management methods included immobilization, rest, and ice packs. No data was reported in the abstract regarding the effectiveness of these pain management methods. The other non-randomized study\(^5\) reported a pain score improvement of at least 50% for patients who underwent acupuncture for persistent joint pain associated with hemophilia. No bleeding or bruising events were reported.\(^5\)

One guideline from the Working Group of the Australian and New Zealand College of Anaesthetists and Faculty of Pain Medicine indicates that cold therapy and bandaging have been used to manage pain associated with hemophilia despite a lack of evidence of their effectiveness.\(^6\)
REFERENCES SUMMARIZED

Health Technology Assessments
No literature identified.

Systematic Reviews and Meta-analyses


Randomized Controlled Trials


Non-Randomized Studies


Guidelines and Recommendations


PREPARED BY:
Canadian Agency for Drugs and Technologies in Health
Tel: 1-866-898-8439
www.cadth.ca
APPENDIX – FURTHER INFORMATION:

Clinical Practice Guidelines – Methodology Not Specified

See: Pain Management, pages 63-64

See: 1.9 Pain management, page 15

See: Non-Pharmacological Pain Management Strategies, pages 18-21


Qualitative Studies


Review Articles

PubMed: PM25093002
 PubMed: PM23534844
 See: Coagulation improvement and reduction in pain, page 496


Additional References

 PubMed: PM24372731

 PubMed: PM21645179

 PubMed: PM20590873