TITLE:  Infusion Pump Pressure Settings for Pediatric Patients: Clinical Evidence and Guidelines

DATE:  28 October 2015

RESEARCH QUESTIONS

1. What is the clinical evidence regarding using an infusion pump pressure setting of 5 pounds per square inch (PSI) for pediatric patients?

2. What are the evidence-based guidelines regarding infusion pump pressure settings for pediatric patients?

KEY FINDINGS

No relevant literature was identified regarding infusion pump pressure settings for pediatric patients.

METHODS

A limited literature search was conducted on key resources including Ovid Medline, 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 October 20, 2015. Internet links were provided, where available.

SELECTION CRITERIA

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

<table>
<thead>
<tr>
<th>Population</th>
<th>Pediatric patients requiring intravenous infusion</th>
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| Intervention        | Q1: 5 PSI infusion pump pressure setting (258.57 mm Hg)  
                        Q2: Infusion pump pressure settings |
| Comparator          | Q1: Other PSI settings; no comparator  
                        Q2: None required |
| Outcomes            | Q1: Clinical benefits and harms (e.g., effective drug delivery, pain, swelling)  
                        Q2: Evidence-based guidelines |
| Study Designs        | Health technology assessments, systematic reviews, meta-analyses, randomized controlled trials, non-randomized studies, evidence-based guidelines |

mm Hg = millimeter of mercury; PSI = pounds per square inch

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.

No relevant health technology assessments, systematic reviews, meta-analyses, randomized controlled trials, non-randomized studies, or evidence-based guidelines were identified regarding infusion pump pressure settings for pediatric patients.

References of potential interest are provided in the appendix.

OVERALL SUMMARY OF FINDINGS

No relevant literature was identified regarding infusion pump pressure settings for pediatric patients; therefore, no summary can be provided.
REFERENCES SUMMARIZED

Health Technology Assessments
No literature identified.

Systematic Reviews and Meta-analyses
No literature identified.

Randomized Controlled Trials
No literature identified.

Non-Randomized Studies
No literature identified.

Guidelines and Recommendations
No literature identified.

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APPENDIX – FURTHER INFORMATION:

Clinical Practice Guidelines

   *Search ‘pressure’*

2. Intravenous and/or peripheral saline lock insertion and maintenance [Internet]. Saskatoon: Saskatoon Health Region; 2015 May [cited 2015 Oct 26]. Available from: https://www.saskatoonhealthregion.ca/about/NursingManual/1118.pdf
   *See: 2.9.1*

   *See: Monitoring of the infusion*

   *See: 10. 1*

   *See: Appendix 1. Preventing Extravasation in Infants and Children, page 7*

Review Articles