TITLE: Intravenous Administration of Medications in Home Care Settings: Clinical Evidence and Guidelines

DATE: 22 December 2014

RESEARCH QUESTIONS

1. What is the clinical evidence regarding the safety of intravenous (IV) administration of medications or hydration therapy to patients in home care settings?

2. What are the evidence-based guidelines regarding IV administration of medications or hydration therapy to patients in home care settings?

KEY FINDINGS

One systematic review and five non-randomized studies were identified regarding the safety of IV administration of medications or hydration therapy to patients in home care settings. One evidence-based guideline was identified regarding IV administration of medications or hydration therapy to patients in home care settings.

METHODS

A limited literature search was conducted on key resources including MEDLINE, PubMed, The Cochrane Library (2014, Issue 12), University of York Centre for Reviews and Dissemination (CRD) databases, CINAHL, 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 December 9, 2014. 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>
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<tr>
<th>Table 1: Selection Criteria</th>
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<tr>
<td><strong>Population</strong></td>
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<td><strong>Intervention</strong></td>
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<td><strong>Comparator</strong></td>
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<td><strong>Outcomes</strong></td>
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<td><strong>Study Designs</strong></td>
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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.

One systematic review and five non-randomized studies were identified regarding the safety of IV administration of medications or hydration therapy to patients in home care settings. One evidence-based guideline was identified regarding IV administration of medications or hydration therapy to patients in home care settings. No relevant health technology assessment reports, meta-analyses, or randomized controlled trials were identified.

Additional references of potential interest are provided in the appendix.

OVERALL SUMMARY OF FINDINGS

One systematic review and five non-randomized studies were identified regarding the safety of IV administration of antibiotics to patients in home care settings versus hospital settings. The studies were conducted in several patient populations and reported on a range of safety outcomes including: adverse events, general complications and morbidity, time to readmission, rate of readmission, duration of treatment, time between courses of treatment, change of IV lines, line infection rates, and other condition-specific morbidities. Detailed study findings are presented in Table 2.

<table>
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<th>Table 2: Summary of Outcomes</th>
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<tr>
<td><strong>First Author, Year</strong></td>
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<tr>
<td><strong>Systematic Reviews</strong></td>
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<td>Balaguer, 2012</td>
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Table 2: Summary of Outcomes

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<tr>
<th>First Author, Year</th>
<th>Population, number (n)</th>
<th>Intervention, Comparator</th>
<th>Outcome</th>
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<td>Non-Randomized Studies</td>
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| Bedi, 2014 | Non-cystic fibrosis bronchiectasis n = 116 | IV antibiotics at home (unsupported) or IV antibiotics at home (supported) IV antibiotics in hospital | • Higher rate of morbidity and readmission to hospital in the unsupported home group (no tests of statistical significance presented).  
• No deaths in any group. |
| Rodriguez-Cerrillo, 2013 | Elderly patients with uncomplicated diverticulitis n = 52 | IV antibiotics at home IV antibiotics in hospital | • Lower proportion of free fluid observed in patients treated at home.  
• No transfers to hospital in the home group. |
| Barr, 2012 | Patients receiving IV antibiotics n = unspecified | IV antibiotics at home IV antibiotics in hospital | No difference in the rate of line infections associated with home administration. |
| Brugha, 2012 | Children with preseptal cellulitis n = 63 | IV antibiotics administered on an ambulatory basis IV antibiotics in hospital | No difference in duration of treatment or rate of complications between groups. |
| Collaco, 2010 | Patients with cystic fibrosis n = 1,535 | IV antibiotics at home IV antibiotics in hospital | • Long term decline in FEV1 observed in both groups.  
• No difference in time between courses of antibiotic treatment between groups. |

FEV1 = forced expiratory volume in the first second; IV = intravenous.

One evidence-based guideline developed by the British Society for Antimicrobial Chemotherapy and the British Paediatric Allergy, Immunity and Infection Group was identified regarding administration of IV antibiotics to pediatric outpatients. This guideline states support for administering IV antimicrobial therapy at home if possible, based on evidence suggesting a benefit for various psychosocial, productivity, health-related and cost outcomes. It also contains guidance on: roles and responsibilities; patient suitability and indications (infants with fever, children with endocarditis or meningitis, children discharged from emergency departments); device selection and care; drug selection, delivery, and patient monitoring; clinical governance and outcome monitoring; and developing a business case for funding.
REFERENCES SUMMARIZED

Health Technology Assessments
No literature identified.

Systematic Reviews and Meta-analyses


Randomized Controlled Trials
No literature identified.

Non-Randomized Studies


Guidelines and Recommendations

APPENDIX – FURTHER INFORMATION:

Non-Randomized Studies

No Comparator


Alternate Comparator


Clinical Practice Guidelines


2.7 Safe use and disposal of sharps and hazardous material, page 13.
8.9 Intravenous immunoglobulin therapy, page 55.

See: Support System/Resources (Level IV), page 24.

Additional References

PubMed: PM25391559