

CADTH RAPID RESPONSE REPORT: REFERENCE LIST

Intravenous Multivitamin Therapy Use in Hospital or Outpatient Settings: Clinical Effectiveness and Guidelines

Service Line:	Rapid Response Service
Version:	1.0
Publication Date:	January 15, 2020
Report Length:	5 Pages

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Cite As: *Intravenous Multivitamin Therapy versus Oral Multivitamin Use in Hospital or Outpatient Settings: Clinical Effectiveness and Guidelines*. Ottawa: CADTH; 2020 Jan. (CADTH rapid response report: reference list).

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Funding: CADTH receives funding from Canada's federal, provincial, and territorial governments, with the exception of Quebec.

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Research Questions

1. What is the clinical effectiveness of intravenous multivitamin therapy in a hospital or outpatient setting?
2. What are the evidence-based guidelines for using IV multivitamin therapy in a hospital or outpatient setting?

Key Findings

One non-randomized study was identified regarding the clinical effectiveness of intravenous (IV) multivitamin therapy in a hospital or outpatient setting. No evidence-based guidelines regarding the use of IV multivitamin therapy in a hospital or outpatient setting were identified.

Methods

A limited literature search was conducted by an information specialist on key resources including PubMed, the Cochrane Library, the University of York Centre for Reviews and Dissemination (CRD) databases, the websites of Canadian and major international health technology agencies, as well as a focused Internet search. The search strategy was comprised of both controlled vocabulary, such as the National Library of Medicine's MeSH (Medical Subject Headings), and keywords. The main search concepts were multivitamins and intravenous administration. 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, 2015 and January 8, 2020. 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

Population	Q1-2: Patients with malabsorption issues (e.g., irritable bowel syndrome [IBS], anorexia, bulimia) post-surgery or post-bariatric surgery, burns, trauma, intoxication, and other serious infectious diseases [e.g., <i>C. difficile</i>]
Intervention	Q1-2: Intravenous multivitamin therapy (also known as Classic Myers' Drip, "banana bag", intravenous 12 or intravenous 1000 formulation)
Comparators	Q1: Oral multivitamin therapy, no vitamin therapy, intravenous saline, intravenous Ringer's lactate Q2: Not applicable
Outcomes	Q1: Clinical effectiveness (e.g., hospital readmission, length of stay, safety, adverse events) Q2: Evidence-based 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.

One non-randomized study¹ was identified regarding the clinical effectiveness of intravenous (IV) multivitamin therapy in a hospital or outpatient setting. No relevant health technology assessments, systematic reviews, meta-analyses, or randomized controlled trials were identified. No evidence-based guidelines regarding the use of IV multivitamin therapy in a hospital or outpatient setting were identified.

Additional references of potential interest are provided in the appendix.

Health Technology Assessments

No literature identified.

Systematic Reviews and Meta-analyses

No literature identified.

Randomized Controlled Trials

No literature identified.

Non-Randomized Studies

1. Rehou S, Shahrokhi S, Natanson R, Stanojcic M, Jeschke MG. Antioxidant and trace element supplementation reduce the inflammatory response in critically ill burn patients. *J Burn Care Res.* 2018 Jan 1;39(1):1-9.
[PubMed: PM28877128](#)

Guidelines and Recommendations

No literature identified.

Appendix — Further Information

Systematic Reviews and Meta-analyses

Alternative Intervention

2. Flannery AH, Adkins DA, Cook AM. Unpeeling the evidence for the banana bag: evidence-based recommendations for the management of alcohol-associated vitamin and electrolyte deficiencies in the ICU. *Crit Care Med*. 2016 Aug;44(8):1545-1552.
[PubMed: PM27002274](#)

Mixed Intervention

3. Avenell A, Smith TO, Curtain JP, Mak JC, Myint PK. Nutritional supplementation for hip fracture aftercare in older people. *Cochrane Database Syst Rev*. 2016 Nov 30;11:Cd001880.
[PubMed: PM27898 998](#)

Non-Randomized Studies

Alternative Intervention

4. Marik PE, Liggett A. Adding an orange to the banana bag: vitamin C deficiency is common in alcohol use disorders. *Crit Care*. 2019 May 10;23(1):165.
[PubMed: PM31077227](#)

Mixed Intervention

5. Main WPL, Murphy AE, Hussain LR, Meister KM, Tymitz KM. Thirty-day readmission rate using an outpatient infusion pathway after laparoscopic Roux-en-Y gastric bypass. *Am Surg*. 2018 Sep 1;84(9):1429-1432.
[PubMed: PM30268170](#)

Additional References

Expert Consensus

6. Blaauw R, Osland E, Sriram K, et al. Parenteral provision of micronutrients to adult patients: an expert consensus paper. *JPEN J Parenter Enteral Nutr*. 2019 Mar;43 Suppl 1:S5-s23.
[PubMed: PM30812055](#)