



**TITLE:** Vitamin K for Patients with High International Normalized Ratios (INRs): Safety

**DATE:** 24 October 2014

## **RESEARCH QUESTION**

What are the outcomes associated with administering vitamin K to patients on oral anticoagulation therapy, who have an International Normalized Ratio (INR) greater than 8 or greater than 10?

## **KEY FINDINGS**

One non-randomized study was identified regarding administering vitamin K to patients on oral anticoagulation therapy, who have an INR greater than 9.

## **METHODS**

A limited literature search was conducted on key resources including Medline, PubMed, The Cochrane Library (2014, Issue 10), University of York Centre for Reviews and Dissemination (CRD) databases, 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, 2009 and October 21, 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.

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**Table 1: Selection Criteria**

<b>Population</b>	Adult patients on anticoagulants
<b>Intervention</b>	Use of Vitamin K in patients with INR >8; Use of vitamin K in patients with INR >10
<b>Comparator</b>	None
<b>Outcomes</b>	Safety (mainly harms)
<b>Study Designs</b>	Health technology assessments, systematic reviews/meta-analyses, randomized controlled trials, non-randomized studies.

## 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 and non-randomized studies.

One non-randomized study was identified, regarding administering vitamin K to patients on oral anticoagulation therapy, who have an INR greater than 9. No health technology assessments, systematic reviews, meta-analyses, or randomized controlled trials were identified. In addition, no studies specific to patients with an INR greater than 8 or greater than 10 were identified.

Additional references of potential interest are provided in the appendix.

## OVERALL SUMMARY OF FINDINGS

One non-randomized study analyzed data from patients with an INR greater than 9. The authors found that withholding warfarin or giving vitamin K treatment did not effectively reduce the INR within 24 hours. They concluded that hospitalized patients with an INR greater than 9 may respond more slowly to these treatments due to underlying disease, comorbidities, and medications.

## 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

1. Pagano MB, Chandler WL. Bleeding risks and response to therapy in patients with INR higher than 9. *Am J Clin Pathol.* 2012 Oct;138(4):546-50.  
[PubMed: PM23010709](#)

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**APPENDIX – FURTHER INFORMATION:**

**Additional References**

2. Canadian Pharmacist's Letter [Internet]. Stockton (CA): Therapeutic Research Center. The Role of Vitamin K in Warfarin Patients; 2012 [cited 2014 Oct 23]. Available from: <http://canadianpharmacistsletter.therapeuticresearch.com/ce/cecourse.aspx?pc=12-240&AspxAutoDetectCookieSupport=1>
3. Prasad S, Wootten MR, Kulinski N, Chapman SA. What to do when warfarin therapy goes too far. J. 2009 Jul;FAM. PRACT. 58(7):346-52.  
[PubMed: PM19607771](#)