

PROGNOSIS UNIT

Natural history of cerebral vein thrombosis, including risk related to a subsequent pregnancy.

Objectives:

To assess the validity and applicability of an article attempting to predict the prognosis associated with a given condition. These include:

Acquire the skills necessary to appraise the methodology of a systematic review and/or a cohort study examining an issue of prognosis.

Determine how information from a prognosis study can be incorporated into clinical reasoning.

Assignment:

1. Read the attached scenario.
2. Read the attached guidelines for reading articles concerning prognosis.
3. Answer the methods questions presented at the end of the scenario
4. Critically appraise the attached articles using the accompanying worksheet.
5. Describe how you would address the questions about prognosis raised in the scenario, taking into account your review of the articles provided. In particular discuss what is the relative contribution of the two papers, and how they complement each other.

Clinical Scenario:

You are a Junior Attending providing inpatient hematology consultations, and you are asked to assess a 29 year old woman who has delivered 3 weeks ago her first daughter and is now readmitted for headache, diagnosed with a cerebral vein thrombosis and started on anticoagulants by the hematologist on call. The Ob&G MRP requesting your help tells you that she presented with rather severe headache but without cognitive impairment; she has no history of previous VTE, and she has never been on birth control pill. She has improved and is ready to be discharged home, but both her and her husband are very worried about their future, and particularly they wonder if they have to abandon their plan to have a large family.

You agree to meet the young couple and provide advice, but you feel you have to refresh your knowledge, and ask your resident to do a quick literature search. You ask her to spell out the clinical question in lay terms and then to translate it to the PICO format she will be using for the search.

You and your resident formulate the two following clinical questions: 1) In patients with pregnancy related cerebral vein thrombosis, what is the risk of mortality or permanent morbidity? and 2) what is the risk of recurrence/severe complications related to a subsequent pregnancy?

You subsequently come up with the following PICO:

Patient / population / problem: cerebral vein thrombosis

Intervention / exposure / prognostic factor: puerperium OR pregnancy

Comparison: NA (specification of a comparison adds no useful information to the PICO framework)

Outcome: survival OR recurrence OR recovery

You two wonder if sub-specifying puerperium/ pregnancy, which is your prognostic factor of interest, as intervention in the PICO format correct, and agree to run the search without this term is the yield is to low, considering the rarity of the disease.

You elect to search for a cohort study (or a systematic review of cohort studies) to answer this question. You suggest your resident to use the content terms with the Clinical Queries filter in PubMed setting the filter to high specificity (narrow). You type in the most important components of your question: “cerebral vein thrombosis” “survival” and “pregnancy”. You retrieve one single article, a narrative review published as abstract proceedings on Thrombosis Research in 2013. This is not exactly what you hoped for; however, you spot two promising references among those cited in that paper:

- 1) Natural history of cerebral vein thrombosis: a systematic review. Francesco Dentali, Monica Gianni, Mark A. Crowther, and Walter Ageno. *Blood*. 2006;108:1129-1134
- 2) Prognosis of Cerebral Vein and Dural Sinus Thrombosis Results of the International Study on Cerebral Vein and Dural Sinus Thrombosis (ISCVT) José M. Ferro, Patrícia Canhão, Jan Stam. *Stroke*. 2004;35:664-670.

Indeed, you quickly noticed by searching for the term “pregnancy” in the full text, both articles provide useful evidence for your scope, though missed by your initial search. For curiosity, you try the search omitting the term pregnancy, and you retrieve those two papers directly.

Methods questions

Comments about what you learned about the following:

1. The search used the key words from PICO to drive the search
2. The use of clinical queries within PubMed
3. Pros and cons of adding a “prognostic factor” term in the search (you can also discuss the differences between searching in titles, abstract and MESH terms).

Enclosed Materials:

1. Adrienne G Randolph, Deborah J Cook, and Gordon Guyatt. Prognosis. Chapter 20 of Guyatt G, Drummond R. *User's Guides to the Medical Literature: A Manual for Evidence Based Clinical Practice*, 3rd Edition (JAMA). New York, NY: The McGraw- Hill Companies, Inc, 2015.
2. Francesco Dentali, Monica Gianni, Mark A. Crowther, and Walter Ageno. Natural history of cerebral vein thrombosis: a systematic review. *Blood*. 2006;108:1129-1134
3. José M. Ferro, Patrícia Canhão, Jan Stam. Prognosis of Cerebral Vein and Dural Sinus Thrombosis Results of the International Study on Cerebral Vein and Dural Sinus Thrombosis (ISCVT) *Stroke*. 2004;35:664-670.
4. Worksheet for evaluating an article on prognosis.