

Answering clinical questions

What is the best way to search the Web?

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Have you ever had difficulty finding the answer to a clinical question? Do you know where to go to find valid information on the Web? Does the thought of not having your preceptor around to answer your clinical questions terrify you? You are not alone. But with a logical approach and the help of some on-line tools, your search should be quick and simple.

In this article, we present a case and an associated clinical question and describe the process of trying to come up with an answer to this question using the Internet alone. We chose to look only at articles available without subscription, as we do not always have time to ask the library for an article when a patient is in front of us. We also used a variety of key words; our goal was to mimic what is often done in practice and not to validate the reproducibility of the tools. We hope this article will help you find evidence-based information to support your decisions.

Case

A 23-year-old woman in her first pregnancy presents at the early labour unit at 37 weeks and 1 day's gestation. She is negative for group B streptococcal disease and her pregnancy has been uncomplicated to date. She presents with premature rupture of membranes (PROM) confirmed clinically on sterile speculum examination. The nurse asks you when to start her induction. You wonder whether there is an evidence-based answer to this question.

PICO: population, intervention, comparison, and outcome

The first step is to structure your question correctly. The more focused your clinical question, the easier your search and subsequent selection of relevant articles will be. The PICO format is a great way to organize your clinical question. Using our example, the question becomes:

- Population: Among group B streptococcal-negative women with uncomplicated pregnancies...
- Intervention: ...is expectant management...
- Comparison: ...as good as or better than immediate induction...
- Outcome: ...for a safe and healthy delivery for mother and baby?

The next step is to search the Internet. Although very tempting, "Googling" your question does not necessarily lead to the best evidence-based answer. The College of

Family Physicians of Canada's Residents' Page is a good place to find a list of the main evidence-based search engines and databases (www.cfpc.ca/English/cfpc/education/section%20of%20residents/resource/research%20page/default.asp?s=1).

PubMed

The obvious starting point for any literature search is PubMed (www.ncbi.nlm.nih.gov/sites/entrez/). Searching PubMed can be discouraging, however, because a PubMed search often brings up an enormous number of basic science papers that tend not to be clinically pertinent. You might wish to limit your search to review articles, meta-analyses, and practice guidelines. For our example, searching PubMed using the terms *premature*, *rupture*, *membranes*, and *expectant* with these limits produced 39 articles, including 34 reviews, 20 of which had been published in the last 10 years. By simply scanning the titles, we saw that 4 were clearly relevant to our question. These 4 were the following:

- American College of Obstetricians and Gynecologists. Practice Bulletin No. 80: Premature rupture of membranes. Clinical management guidelines for obstetrician-gynecologists;¹
- Rosen R. Planned early birth vs expectant management for PROM;²
- Dare MR, Middleton P, Crowther CA, Flenady VJ, Varatharaju B. Planned early birth versus expectant management (waiting) for prelabour rupture of membranes at term (37 weeks or more);³ and
- Duff P. Premature rupture of the membranes in term patients: induction of labor versus expectant management.⁴

Other search engines

There are alternatives to PubMed. For instance, SUMSearch (<http://sumsearch.uthscsa.edu/>) is an engine that searches through practice guideline databases, systematic review databases, and original research databases and organizes its results in those categories. Entering the term *PROM* in the SumSearch engine led us to 7 practice guidelines, 18 systematic reviews, and many original research articles. The previously mentioned article by Rosen and the ACOG Practice Bulletin came up as well as 1 other useful reference: Mozurkewich EL, Wolf FM. Premature rupture of membranes at term: a meta-analysis of three management schemes.⁵

The TRIP Database (www.tripdatabase.com) is a search engine that searches only for evidence-based medicine (EBM) articles. When the terms *prelabour*, *rupture*, and *membranes* were entered, TRIP came up with the same Cochrane review we had found through PubMed and the following document: Verghese L, Varma R, Publicover M. Early induction vs expectant management in women at term with prelabour rupture of membranes, which is an appraisal based on Hannah ME, Ohlsson A, Farine D, Hewson SA, Hodnett ED, Myhr TL, et al. Induction of labour compared with expectant management for prelabour rupture of the membranes at term. TERMPROM Study Group.⁶

Those 2 EBM search engines usually succeed in finding clinically relevant articles. These articles, however, are often from the United States or the United Kingdom where guidelines might be different from those we have in Canada.

Another excellent resource is InfoClinique (<http://www.infoclinique.fmed.ulaval.ca>), which has been developed by the Faculty of Medicine at Laval University in Quebec. It is unique in its ability to search several French and English databases (with many Canadian references) of EBM articles, continuing medical education articles, textbooks, professional information sources, public health documents, images, complementary and alternative medicine sources, and patient information simultaneously. Unfortunately, this search engine is currently available only to Laval University members, but the link list found in the "Sources" section has an impressive set of hyperlinks to relevant websites that can be accessed by all Web users.

Textbooks

If you are not satisfied with the articles found by those EBM search engines, you can use electronic textbooks such as *eMedicine* (free) or *UpToDate* or *Dynamed* (access fee). Using your membership in the Canadian Medical Association, you also have access to many books through MD Consult (a virtual library of textbooks such as *Ferri's Clinical Advisor*, *Noble Textbook of Family Medicine*, and many specialty textbooks) or StatRef (including the "Current Concepts" series, *Harrison's Principles of Internal Medicine*, the 4th edition of the *Diagnostic and Statistical Manual of Mental Disorders*, *Fitzpatrick's Dermatology Atlas*, and *Williams' Obstetrics*). Depending on when they were last edited, the information in such books is more or less up-to-date.

Answer to the clinical question

Using the previously selected articles, it took 5 to 10 minutes to find the following answer to our clinical question.


With term PROM, labour can be induced at the time of presentation or patients can be observed for up to 24 to 72 hours for the onset of spontaneous labour (Level A evidence).⁶ Both early induction and expectant

management are reasonable options. However women must be counseled that there is about a twofold relative risk of chorioamnionitis with expectant management compared to immediate induction.⁶ Planned management (with methods such as oxytocin or prostaglandin) reduces the risk of some maternal infectious morbidity without increasing cesarean sections and operative vaginal births. Fewer infants went to neonatal intensive care under planned management although no differences were seen in neonatal infection rates.³

Returning to our case

You decide, in conjunction with your patient and after discussion about the risks and benefits of both options, to send her home for 24 hours. She returns 18 hours later to the labour and delivery unit with contractions every 3 to 5 minutes and delivers a healthy baby 6 hours later.

Conclusion

We hope this article will help you to structure your clinical questions and find answers to the variety of issues that arise in your daily practice. If you wish to learn more about answering clinical questions, you can read "How to Answer Your Clinical Questions More Efficiently"⁷ by Jeffrey M. Weinfeld. 

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Competing interests

None declared

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