09/05/06

Rational Clinical Examination Procedures

Summary Outline for Each Overview:

1) An **ABSTRACT** with the following headings
   Context
   Objectives (The objective should begin with: "To evaluate the diagnostic yield and most efficient methods of performing xxxx to obtain yyyyy for diagnosing zzzzz"
   Data sources
   Study selection
   Data extraction. This section should state that you extracted or computed the diagnostic yield and information on adverse events from each article. There should be a statement about meta-analysis if you did that.
   Data synthesis
   Conclusions

1) The Patient(s). A clinical scenario

2) Why is this procedure important for generalist clinicians?

   a. What are we using the procedure to diagnose? That is, how is it linked to the clinical examination? Reference previous articles in the Rational Clinical Examination series when possible and use the data to establish the probability of disease before you do the procedure. For example, use the information from the RCE about prevalence of disease and the LR for the clinical findings, so that the clinician knows "why" they are doing the procedure. When there are no data on this, you should still try to put this into some sort of context for the reader. The paradigm here is the "don't treat-test-treat" thresholds of Steve Pauker (N Engl J Med. 1980 May 15;302(20):1109-17.)

   b. What are the adverse events that might occur? And who should you NOT do the procedure on (ie, contraindications).

   c. Does it provide therapy in addition to diagnosis? (e.g. therapeutic paracentesis)

3) The anatomic/physiologic principles necessary to understanding the procedure. (we'll help with illustrations)
4) Methods section that lists the Methods for literature searching, inclusion criteria for articles, and both qualitative and quantitative results of the search.
    a. The highest level of evidence will be RCTs of various procedural approaches.
    b. The next best level of evidence will likely be cohort studies of consecutive patients undergoing the procedure.
5) Results section
    a. What procedural approaches have been studied? REMEMBER, we are highlighting EVIDENCE-BASED material in the Results section.
    b. What is the success rate for the procedure?
        i. Is there evidence for the procedure that gives the highest yield (by yield, we mean the probability of an interpretable result)?
            1. For a mathematical definition of yield and how it affects sensitivity and specificity (see Simel DL, DeLong ER, Feussner JR, Matchar DB. Intermediate, indeterminate, and uninterpretable diagnostic test results. Med Decis Making 1987: 7: 107-114.). When there is evidence comparing yield for two different procedures, you can consider using a NNT approach to display the benefit of one procedure over the other.
            2. Consider various factors, supported by evidence, that might lead to variable success rate

a. Experience of observer

i. By degree and training

ii. By number of procedures performed

b. Patient factors

ii. Use meta-analytic techniques, when possible.

c. Is there evidence for the approach that produces the lowest number of side effects?

i. Is there evidence for tests that might be ordered before the procedure is done to lower adverse events(e.g., a bleeding time, or an Allen's test prior to a blood gas?) or for other approaches (e.g. premedication)

ii. Use meta-analytic techniques, when possible

6) How are the results interpreted?

a. What studies, if any, do you order after a specimen is obtained?

i. It is not necessary that you discuss every possible clinical diagnosis. Some topics will lend them selves to a short discussion of the most common diagnoses (e.g. arthrocentesis for an infected joint or gouty joint? In some cases, it might be simply best to focus on what constitutes a normal result, rather than the myriad of abnormalities and their diagnoses)

ii. What studies do you order to confirm there was no adverse event?

7) Is there any evidence supporting special ways to learn the procedure.

8) Tips for clinicians that take into account "expert" opinion

a. Consider text boxes that list

i. The required supplies to do the procedure.

ii. The recommended procedure steps (we'll help with illustrations)

iii. Studies to order before and after the procedure

b. Consider information that should go into an informed consent for the procedure

c. Consider expert's advice on what to tell the patient.

d. What to do if you have an adverse outcome.

9) The "Bottom Line" on which procedural approaches work to give the highest yield with the lowest adverse event rate.