Keeping Up to Date

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CASE 18-1

At 10:00 PM, the junior medical student on her medicine clerkship learns about her first admission of the night, a 34-year-old man with a history of alcohol abuse who now complains of epigastric pain and an inability to keep any liquids down. On physical examination, he is mildly uncomfortable, with orthostatic changes in pressure and pulse and significant epigastric tenderness. Lab results are normal except for an amylase of 324 mg/dl.

After examining the patient, the student is expected to prepare a formal written history and physical examination as well as a short oral presentation at morning rounds. For background information on pancreatitis, she looks in her textbook of medicine. Noting that the textbook was updated 4 years before, she does an online search for a recent evidence-based review.

At morning rounds, she briefly summarizes the prognosis and treatment of pancreatitis, recommending i.v. fluids, pain control, and withholding an NG tube in view of his mild course. The patient recovers in 2 days and is discharged to outpatient alcohol rehabilitation.

EDUCATIONAL OBJECTIVES

1. Describe three sources of medical information and identify their strengths and weaknesses
2. Identify the principles of effective computer searching and apply them to actual clinical problems
3. Describe the criteria for critically appraising articles on diagnosis, prognosis, treatment, meta-analysis, and causation of disease
4. Apply the principles of critical appraisal to specific articles and clinical situations

INTRODUCTION

Medical students, residents, and practicing physicians spend a great deal of time obtaining and evaluating medical information, but rarely get practical training in how to do this efficiently and effectively. Over the
PANCREATITIS

Pancreatitis is an inflammation of the pancreas, commonly as the result of alcohol abuse or gallstone disease but also as a side effect of medications given by physicians. Symptoms include nausea and abdominal pain associated with elevated serum analysis and lipase. Patients need assessment to exclude other causes of these symptoms and need hospitalization if i.v. fluids or pain medication are necessary. Rarely, patients with pancreatitis can become critically ill. It is important to identify these patients early and treat them aggressively.

Last 30 years, there has been an explosion of medical information available to physicians. Unfortunately, however, there has not been a similar expansion in the hours of the day available for physicians to review this information. As a result, practitioners have become increasingly like the rabbit in Alice in Wonderland, running ever faster to stay in the same place.

To make incorporating new information into practice more feasible, a group of physicians with training in epidemiology at McMaster University developed techniques for “critical appraisal of the literature” (Sackett et al., 1991) and putting evidence into practice. Based on the application of the principles of epidemiology to clinical research, critical appraisal allows physicians to prioritize the information available and systematically to review the quality of the information they receive. Using this approach, searching for appropriate literature is dramatically faster, and evaluation of what is found is substantially more rigorous.

CASE 18-2

As part of a didactic seminar in the obstetrics and gynecology clerkship, a medical student is asked to present a 15-minute talk about epidural anesthesia: common techniques, mechanism of action, effectiveness, and adverse consequences. The talk is scheduled to be given in 1 week; the student reviews the relevant sections of his obstetrics text, as well as an anesthesiology text from the library. He also talks with the obstetric anesthesiologist to learn the techniques in use at this hospital and with the hospital business office to learn the current charges for epidurals. The talk goes well; the seminar leader, after praising the student’s resourcefulness in learning the charges for epidurals, comments that his search was incomplete, in that his presentation did not address a recent important work including a controversial randomized trial suggesting epidurals increase the rate of cesarean section.

RELIEVING THE DISCOMFORT OF LABOR

Management of discomfort of labor is a perennial clinical challenge. Since the early 1900s, there have been a series of “revolutionary” interventions aimed at this purpose—“twilight sleep” (general anesthesia), nitrous oxide, different formulations of narcotics and saddle blocks—all later being found to have adverse effects for mother and/or baby. The latest attempt is epidural anesthesia, typically placed by an anesthesiologist with the onset of active labor. Epidural anesthesia provides excellent pain relief but may lead to dural puncture headaches, prolonged labor, and increased risk of cesarean section.