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Preoperative PTs, PTTs, Cost-Effectiveness, and Health Care Reform

Radical Changes That Make Good Sense

In this issue of *Chest* (see page 703), Kozak and Brath demonstrate that preoperative prothrombin times (PTs) and partial thromboplastin times (PTTs) cannot distinguish between patients who bleed following fiberoptic bronchoscopy with biopsy (11 percent) and those who do not experience bleeding (89 percent). The prevalence of bleeding, as defined by their criteria, was 11 percent of the entire group (n=305), 11 percent of those with abnormal coagulation studies (n=28), and 11 percent of those with presumed clinical risk factors (n=61). These tests, namely the PT and PTT, were no better (yet substantially more expensive) at prediction than chance alone. This study joins the parade of reports revealing, without exception, the same findings; namely, that routine preoperative coagulation screening tests on all patients cannot predict bleeding. Although ordering these tests has become the norm and accepted practice, such should not be considered standard of care because such practice is wrong and proved to be so. This fact has been demonstrated for tonsillectomy,[1-4] ambulatory surgery,[5,6] abdominal and thyroid surgery,[7] coronary artery bypass surgery,[8] liver biopsy,[9-12] and paracentesis and thoracentesis.[13]

However, multiple studies have shown that history of abnormal hemostasis or bleeding after previous surgery is predictive of surgical bleeding.[14-16] Some[5,17] have suggested restricting preoperative coagulation screening to those patients with a personal or family history of spontaneous or posttraumatic bleeding; to those with liver disease, malnutrition, anemia, purpura, or other signs of abnormal hemostasis; or to those with a history of receiving chemotherapy, radiation therapy, or anticoagulant therapy. Using such criteria, at least 85 percent of preoperative coagulation screening is done without merit (personal observations).

Even if the preoperative PT or PTT is abnormal, it is not certain that abnormal hemostasis will occur given the many causes, to include laboratory error of prolonged coagulation tests.[1,18] Even worse, many abnormal test results are not seen, ignored, or not acted on as though the ritual of procuring the test was more operative than the actual results.[5,17] Many physicians state that they understand these tests add little to clinical data yet order them to feel more secure.[19]

The PT and PTT became commonly used during the 1960s and 1970s to monitor anticoagulant therapy and screen for congenital hemophilic states. These they do well and their use is recommended. Somehow during the 1980s and into the present, these indications for which the PT and PTT were developed became adulterated into screening for any and all types of hemorrhage—a sort of laboratory insurance policy. Most laboratories perform PTs and PTTs for unclear indications. Nowadays, they are most frequently viewed as a routine hospital admission test. Table 1 lists potential reasons for ordering of these tests in more or less descending order of rationality but in increasing order of prevalence.

Whereas the lack of firm indications for these tests was barely acceptable and tolerable in the 1980s, now in the 1990s with focus on health care reform and trimming excessive and unnecessary costs, one would be hard pressed to find better examples of fat than the ordering of routine hospital admission and preoperative PTs and PTTs. Narr and colleagues[6] justified the elimination of all preoperative testing for healthy patients undergoing surgery and documented substantial savings without an increase in adverse outcome. Billions of dollars annually could be saved

Table 1—*Ten Reasons to Order Prothrombin and Partial Thromboplastin Times*

Reasons
1. Screening for congenital abnormalities of the coagulation system
2. Screening for acquired abnormalities of the coagulation system
3. Monitoring factor replacement in congenital hemophilia
4. Monitoring anticoagulant therapy
5. Search for a lupus anticoagulant
6. Part of a disseminated intravascular coagulation battery
7. Liver function test
8. Preoperative evaluation
9. Routine hospital admission order
10. Ritual to ward away the evils of potential hemorrhage

immediately if the country were to adopt a similar reasoned stance. Very austere yet defensible and practical preoperative testing guidelines were recently presented by Roizen.[20] In his model, preoperative PTs and PTTs were sanctioned only for those patients with leukemia, hepatic disease, history or physical evidence of a bleeding disorder, or those taking anticoagulant drugs. Clearly, we have a long way to go to be in compliance with Roizen's model, but the article in this issue by Kozak and Brath and these economic and political times justify bold moves, especially moves which are sound, correct, and evidence based. Just do it!

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The War Against Cigarette Smoking

The Final Battles

There seems to be a rhythm peculiar to war. Battles are fought but few appear decisive at the time, and little seems to change. However, as war reaches its conclusion, events occur at such a pace that one is bearly able to keep up. And so it is with the war against cigarette smoking. Almost daily, there are announcements of proposed governmental action designed to curb smoking and to regulate the tobacco industry. David Kessler, Commissioner of the FDA, has proposed that cigarettes should be regulated as a drug, arguing that cigarettes are delivery devices for nicotine. President Clinton has prohibited smoking in the White House. The Bureau of Labor has sought to eliminate smoking from the workplace, while Representative Henry Waxman has introduced legislation that would prohibit smoking in all public buildings. For the first time in our nation's history, there appears to be a confluence of support from the medical community, the legislature, and the executive branch to reduce or eliminate smoking from the national scene. Perhaps the long war against cigarette smoking is nearing its end.

The health consequences of cigarette smoking have been widely known for at least three decades. In 1964, the Surgeon General reported to the nation that cigarette smoking was causally related to cancer of the lung and larynx.[1] Smoking has since been linked to cardiovascular disease, stroke, obstructive airway disease, pregnancy complications, and to a variety of neoplasms.[2] The tobacco industry has sought to counter these reports by first denying the health effects of smoking, and then more recently, by invoking the notion of individual rights, *ie*, the right of a person to assume risks. The latter argument has been severely challenged by data linking environmental tobacco smoke (ETS) to health effects in