Flow-directed Pulmonary Artery Catheterization

Moratorium vs Clinical Trial

Flow-directed pulmonary artery catheterization is a mainstay of critical care. Reasoned, but not necessarily justified, demands for a moratorium on its use\(^1,2\) now call for an appropriate response.

In 1980, an analysis of invasive monitoring concluded that in addition to many known complications and hazards, all intravascular instrumentation tends to impose a physiologic burden that changes the patient's reactivity to disease and to physiologic and pharmacologic challenges.\(^3\) This was the impetus for a retrospective investigation of 3,000 patients admitted to the University of Massachusetts Medical school-affiliated hospitals that indicated possible lack of net benefit—and implying potential harm—from flow-directed pulmonary artery catheterization during acute myocardial infarction.\(^4\) A "go-with" editorial\(^5\) demanded a moratorium on the procedure based on a free extrapolation from the University of Massachusetts study figures that suggested an excessive death rate ascribable to the catheters. The authors of the investigation, however, had emphasized that the study was entirely retrospective (although matched) and at best exploratory. Since then, the investigation and editorial have entered the public domain\(^6,8\) and, subsequently, the formal malpractice analyses of law firms.\(^7\) Although the dangers of extrapolation from nonprospective and nonrandomized studies have long been known, a physician who is convinced that a modality may be dangerous is in a position entirely consistent with the proposal for a moratorium. On the other hand, if the data can be considered inconclusive, then the position would be one favoring further study.

The 1980 article analyzing intravascular instrumentation also carried an original proposal for a randomized controlled trial of flow-directed pulmonary artery catheterization.\(^3\) This was not adopted, but the question of a moratorium may force the issue. Moreover, the widespread use of the catheters places cardiology and critical care in the classic position of the genie having escaped from the bottle, and it will be difficult to convince many, if not most, users of these instruments, that, at least on balance, they might not be helpful, particularly in the context of only a single and retrospective study. Indeed, recently a distinguished investigator of the hemodynamics of acute care has supported the moratorium.\(^9\)

What, then, can be done in this context? A randomized controlled trial remains an option. The reason the genie is out of the bottle is that an appropriately designed randomized controlled trial was not done ab initio\(^*\) which is the principal way to keep such genies bottled. However, better late than never, and the proposal for a controlled trial\(^6\) could now be invoked as a compromise between a draconian moratorium\(^1,2,6\) and remaining at the status quo. Moreover, since there is a widespread presumption (in which I join) of very frequent, if anecdotal, success with flow-directed catheters, a trial could be justified to refine indications for their use, as well as to investigate their safety.

A straightforward clinical trial could be accomplished by entering each patient in whom the question of bedside pulmonary artery catheterization arises into such an investigation via a relatively simple mechanism: in each hospital a committee of three experts would pass on every proposed non-emergent catheterization. A unanimous “yes” or “no” would allocate the patient, but if a single member of the panel dissented, the patient would then be randomized.

This approach might only slowly yield results, but if a sufficient number of institutions collaborated, and with careful follow-up and central quality control,
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References


Patient Dumping

The Physician's Dilemma

A dramatic increase in interhospital patient transfers (usually from private to public hospitals and predominantly for economic reasons) has been seen in this country during the recent decade of sharp cutbacks in federal and state health care funding for the poor. Although interhospital patient transfers have always been considered appropriate when there is a need for specialty or tertiary care, the patient's inability to pay for services has become a commonly accepted reason for transfer, and there is now concern that economic considerations are taking precedence over patient safety as a major determinant of hospital transfer policy. Strong economic pressures are likely to accelerate this trend, since no major improvement in the current Prospective Payment System (PPS) is expected to occur in the near future.

What should be of concern to physicians is that, despite clear guidelines and national standards regarding the physician's responsibility for ensuring patient safety during interhospital transfer, there is a growing body of literature that documents the detrimental consequences of delays in treatment resulting from this type of "social triage." There is a danger that a markedly inferior quality of care will become "the standard" for the millions of uninsured patients at risk for economic transfer while they are clinically unstable. The problem is immense, since an estimated 40 million Americans are underinsured or completely without health insurance coverage.

A simple triage system has recently been shown to accurately identify that group of severely ill pulmonary patients for whom one may confidently predict that hospital costs will greatly outstrip payments based on Diagnosis-Related Groups. The pressures from cost-conscious hospital administrators on emergency medicine and intensive care physicians involved in the care of these patients can be expected to become more intense. If current reimbursement is certain to fall short in these cases, and such patients can be quickly and easily identified, what forces will protect the patient from being exposed to the hazard of delayed treatment and the inherent risk of interhospital transfer?

This crisis presents an opportunity for physicians who practice in emergency medicine and intensive care settings and who feel the intense pressure on the modern "gatekeeper." Together, they can work with hospital managers to ensure compliance with current professional and legal requirements for patient safety during the initial hours of clinical presentation, stabilization and observation. Adequate time, staff, and resources must be devoted to emergency departments, holding and observation areas, and critical-care inpatient units. This will ensure that patients are not placed at undue risk, nor their treatment delayed, as the difficult decisions regarding hospital admission or transfer are made. Emergency and intensive care physicians must work together to be advocates for their patients and to refuse to degrade the quality of the care they provide because of business considerations. Hospital managers must be reminded of their duty to respond to community needs and their legal obligation to support the physician's judgment in admitting patients to intensive care even when the immediate economic outlook is unpromising.

There are several reasons for cautious optimism about patient dumping. Many states have begun to...