Beware the Medical-Industrial Complex
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If Ike were with us today, he might well expand his views on power and influence to include modern American medicine. The corporatization of health care in the United States has moved rapidly in recent years. Physicians are now in a position that requires us to adapt to an increasingly Darwinian existence. Years of training to be “rugged individualists” pushing the frontiers of medical knowledge have not equipped us to fight corporate battles, nor to justify our treatment decisions to bean counters. When the most important consideration becomes the bottom line, then innovation, creativity, and research diminish in importance. They will, in fact, be selected against because they cost money. Up to now, these have been the hallmarks of American medicine, and we must strive to maintain our position of American leadership in biotechnology.

New developments in cancer treatment include expensive technological “bells and whistles” which physicians must ultimately evaluate objectively, despite lush advertisements from companies with obvious vested interests, and authoritative testimonials from biased investigators who presumably believe in their own work to the point of straining credulity and denying common sense. The 3-D image that was created by a computer may look beautiful (and cost accordingly), but it is hard to believe that it can fundamentally change the outcome of patients when it does not add any new data that bear on basic issues. For example, where is the exact edge of the tumor? If one pays through the nose for increasing precision where there is no new accuracy, the purchase appears less attractive, perhaps, than the hype of the salesman or the enthusiasm of a neurosurgeon or a “stereotactic” radiation oncologist (showing biased data, if any at all).

For radiation therapy, the 20th century has largely represented progress by creating larger, higher energy machines for treatment. Now, with the 21st century on the horizon, x-ray treatment parameters have probably been optimized over the past 10 years or so. We see no obvious advantage in an x-ray beam beyond about 18 MeV, and none for electrons beyond 20-25 MeV. Exotic particles such as protons, neutrons, and negative pions, though expensive and difficult to deliver, have not yielded yet significant gains in either local control or survival. A variety of new afterloading machines, such as pulsed high dose rate machines, have also been developed with no clear biologic advantage over more standard remote afterloaders. Thus, new equipment will be exploiting issues of convenience, efficiency, and increased throughput (translate: economic improvement, not biological superiority).

Today’s technology is vastly ahead of our biologic understanding of malignant cells. Our true challenge for the 21st century is to understand the biology of malignant cells and to bring our technology to bear on the biological aspects of cancer. To improve results, cellular manipulations of some sort will probably be necessary. Perhaps these will be mediated through gene therapy, although the manipulation of some genes, to the exclusion of all others, in only tumor cells and in all tumor cells may be a biological challenge beyond our limitations. One is reminded of another time, a decade or two ago, when some tumor immunologists were predicting monoclonal antibodies would soon replace other modalities. Eventually, over time, the immunologists began to appreciate the enormous adaptability that cancer cells possess; the cells are much more than passive receptacles of antigens simply waiting to be destroyed by antibodies. Drugs which affect the function of specific oncogenes, such as the farnesyl transferase inhibitor effect on ras genes, are also quite promising. Clearly, however, there are not “magic bullets” for most cancers. The effects of gene manipulation on patient outcome, if any, are likely to be found only in the setting of
combined modality therapy. The most promising clinical research from the last decade or so reinforces the utility of a combined approach in treating cancers.

Unfortunately, combined treatments and the development of new combined treatments are expensive. In today’s world of corporate medicine and managed care, academic centers are under considerable pressures. They are perceived as being too expensive, and thus they are in danger of being shut out of contractual arrangements with third-party representatives. If these centers are to survive, they must reform themselves: One, they must establish meaningful relationships with community hospitals and community physicians. Two, the academic programs must learn to minimize charges and deliver a true multidisciplinary service to patients in an efficient way. Three, the centers must learn to invest wisely in new technologies that community hospitals cannot and will not be expected to support. This “wisdom” refers to selection of technology that truly may have impact on the outcome of patients’ lives by early detection or by treatment. The euphoria associated with projected gains of some investigational treatments can be misleading: randomized prospective trials have shown in the past that postoperative radiation following a complete resection of lung cancer, breast cancer, or rectal cancer adds a major improvement to local control, but with relatively little improvement in survival. How many times will it be necessary for companies and self-impressed investigators to rediscover this particular wheel?

We must remember that every new therapy costs money, so we must focus our research time and money in promising areas. If cost is allowed to be the most important mitigator of health care, research as we know it will end. The relative lack of new therapies means that some people will die prematurely because of our lack of foresight.

As scientists, we must be seen as providers of a value-added product. Improvement in cancer cure rates has been frustratingly slow. We work against a clever, tenacious adversary - both in the clinic and in the corporate board room. It is our responsibility to tout our accomplishments, admit our failures, and provide progressively better basic and clinical research with an eye toward future improvements in outcome. We must not be seen as yet another special interest come to drink at the well of public spending, but as advocates for the public good. If we fail to become important to those who control medical spending, we will be unable to make any important long-term contribution to those who matter most – our patients.

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