

Media hype and drug discovery



'Many working scientists cringe at the thought of talking to a reporter'

A front page headline of my *New York Times* (Sunday, 3 May, 1998) proclaimed 'A Cautious Awe Greets Drugs that Eradicate Tumors in Mice'. The author, Gina Kolata, is a highly respected science writer. Her byline and the prominent placement of the article suggested some smashing new development in cancer drugs. Reading on, I discovered that the subject of the story concerns the research of Judah Folkman (Children's Hospital, Boston, MA, USA), who has found that angiostatin and endostatin inhibit the proliferation of blood vessels in solid tumors, thus limiting the growth of the tumor. In mice, the two compounds, when given together, prompt the complete disappearance of some tumors. The treatment strategy may also circumvent the development of resistance, because the normal cells involved in the generation of blood vessels are targeted instead of the tumor cells. Folkman's work is exciting and promising, but it has not been devoid of news coverage. I wondered as I continued to read: what is the new development that prompted front-page treatment by the *Times*?

It transpires that there was no news hook. Nothing was reported in the *Times* story that had not already been reported some six months earlier, except enormous superlatives and awe. James Watson, the Nobel laureate and long-time Director of the Cold Spring Harbor Laboratory (Cold Spring Harbor, NY, USA) is quoted as saying, 'Judah is going to cure cancer in two years' and 'Folkman would be remembered along with scientists like Charles Darwin as someone who permanently altered civilization'. Richard D. Klausner, Director of the National Cancer Institute (Bethesda, MD, USA) is said to have commented that angiostatin and endostatin co-treatment is 'the single most exciting thing on the horizon' and 'I am putting nothing on higher priority than getting this into clinical trials.' James Pluda, another researcher at the National Cancer Institute, is said to have been 'electrified' when he

heard Folkman deliver a lecture about the results with angiostatin and endostatin. 'People were almost overwhelmed...' and 'The data were remarkable', were Pluda's comments regarding the reaction to the lecture, according to the article.

Biased view

Watson and Klausner promptly responded with letters to the *Times* claiming that they were misquoted but, by then, their attributed words and the general tone of the article had already had their effect: news media all over the world picked up the story and ran it as a breakthrough in cancer treatment. Television and radio newscasters were especially irresponsible, often leaving out all cautionary statements and implying that remarkable new therapies would soon be available. Calls flooded in from cancer patients clamoring for access to the promising new treatment. The value of the stock of EntreMed, the small Boston biotechnology company that is attempting to convert the promising science into new cancer therapies, quadrupled overnight. Trading in the stock was vigorous – a billion dollars is estimated to have changed hands.

Unfortunately, the status of angiostatin and endostatin therapy is quite different from what was reported. So far, the compounds have only been tested in mice and, although the results are promising, those with experience in cancer chemotherapy understand that numerous therapies that have shown promise in mice later turned out to be ineffective in humans. Moreover, the quantities of the two compounds required to begin testing in humans is nonexistent, and it is estimated that it will take a year, at best, to obtain sufficient amounts of material to mount clinical trials. Cancer patients were disappointed and disillusioned as they realized that the new and promising science may have come too late to help them; the value of EntreMed stock came crashing down.

To be fair, Kolata did include cautionary statements in her *New York Times* article. She reported that the compounds had not yet been given to humans and noted that Jerome Groopman (Harvard University, Cambridge, MA, USA) was skeptical, quoting him as saying, 'a sober scientist waits for the data, and until the drugs are given to humans..., the crucial data simply do not exist'. She reported that Folkman 'is cautious about the drugs' promise' and quotes him as saying, 'until patients take them, it is dangerous to make predictions..., [but] if you have cancer and you are a mouse, we can take good care of you.' It's too bad that these reasonable and cautious statements were completely lost in the ensuing hype and secondary reports of the potential new treatments.

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Ensuing debate

Kolata's article immediately touched off an animated discussion amongst members of the National Association of Science Writers (a professional organization in the USA). In the ensuing discussion the writers asked: should the article have been run; should it have appeared on the front page of the *Times*? Most of the writers thought the article was scientifically valid and an appropriate piece to have appeared in the weekly '*Science Times*' section of the paper, but that it was inappropriate to place it on the front page of the Sunday edition – a decision most likely made by an editor instead of the writer. Such prominent placement was probably the reason why the story was picked up and given such attention by other news outlets.

Many writers also wondered about the quotes attributed to Watson. It turns out that Kolata had attended a dinner party where Watson was also present. She asked him a casual question that evoked the response attributed to him in the article. Should she have used a quote solicited during a social situation without giving him an opportunity to reconsider his words? Most of the writers said they would have made a phone call to give him a chance to tone down his remarks before going to press with the article.

Some of the writers noted that Kolata was circulating a book proposal, which covers new cancer therapies, at the same time the article appeared. They raised the question: is Kolata writing the article to boost interest in her book and

cash advance for the project, which was reported to be in the range of \$1 million? A subsequent article in the *Times* said that Kolata eventually instructed her agent, John Brokman of New York, to withdraw the book offer 'because a reporter's financial stake in a story could cast doubt on coverage' (*New York Times*, 8 May, 1998).

Bad press?

Anyone who reads the popular press can readily come up with other examples of dubious coverage of science in general and the drug discovery industry in particular. Such articles are perhaps the reason that many working scientists cringe at the thought of talking to a reporter: you'll never know if they will take what you say out of context, or hype it to the point that it sounds ridiculous to your colleagues or do a disservice to the hopeful patient who is anxiously awaiting, or even desperate, for a new therapy. If that is your reaction, let me urge you to read the full discussion of Kolata's article by the members of the National Association of Science Writers, which can be found on the Internet (<http://nasw.org/>). The discussion reflects the fact that almost all professional science writers are very knowledgeable about the science they cover, genuinely interested in getting it right, concerned about over-hyping a story, and work hard to portray the scientist and his work fairly.

Robert W. Wallace

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