A promising breakthrough in cancer research

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New research by US medical scientist Dr Judah Folkman into the effect of two drugs, angiostatin and endostatin, on mice may prove to be a significant breakthrough in treating a broad range of cancers in humans.

Folkman announced at the beginning of May that the combined use of the drugs had been successful in eradicating all, even large, cancer tumours in laboratory mice with no apparent side effects. "There was no tumour left. We couldn't even find it with a microscope," Folkman said.

The two drugs act by preventing the process of "angiogenesis," the formation of new blood vessels associated with the growth of cancer tumours. Angiostatin stops the formation of capillaries essential for the maturation of tumours. Endostatin prevents secondary cancer growths emerging in other parts of the body.

Angiogenesis has been investigated by researchers for more than two decades. A tumour only transforms into a malignant growth after it releases chemicals to induce new capillary growth. The blood capillaries grow, engulfing the tumour, and providing it with the necessary growth proteins and nutrients for its maturation.

Many scientists have investigated the possibility of controlling cancer proliferation by understanding the mechanism of angiogenesis. To date, however, none of the dozens of drugs they have developed have proved successful in human trials. Similar drugs have been successful in mice, but then produced dangerous side-effects in human beings.

Folkman, who trained at the Harvard Medical School, is an acknowledged expert on angiogenesis, having worked in the field for almost 30 years. His latest breakthrough came when he began to examine why the surgical removal of tumours often resulted in the patient becoming later riddled with smaller tumours, even though no signs were present prior to the operation.

Folkman concluded that the primary tumour itself must secrete chemicals which inhibit the formation of other cancerous growths. Working with a postdoctoral student Dr Michael Reilly, he isolated the two substances involved, naming them angiostatin and endostatin. His initial findings were released last November.

The results of Folkman's trials clearly thrilled medical researchers, some of whom have been working for years to understand a difficult and complex series of diseases. US National Cancer Institute director Dr Richard Klausner described the research as "the single most exciting thing on the horizon for cancer research".

Many were then dismayed, however, when this promising line of medical research was seized upon by sections of the capitalist media and turned into a headline grabbing beat-up. On May 3, a prominent story in the *New York Times* claimed that the two drugs could be available within a year and would eradicate any type of cancer. The article featured quotes from Nobel laureate James Watson, who later denied the statements, saying Folkman was going to cure cancer within two years.

The stories were a cruel hoax on millions of cancer patients, for many of whom a new cure provides the only hope. CNN reported that its website was inundated with questions about the availability of the drugs. Others offered themselves for the first human trials.

But as a number of scientists and medical researchers quickly pointed out, many steps are involved in the transition from successful trials on mice to a safe treatment for human beings. Neither of the two substances can, as yet, even be produced in sufficient quantities for testing on human patients.

James Pluda, from the drug branch of the US National Cancer Institute (NCI) commented: "This is

not the first time we've been able to take mice with large tumours and cure them. We have to remember that the field of oncology (the science of cancer) is littered with the bodies of therapeutic agents that were going to be the next cure."

What prompted the *New York Times* to headline the story, and other media outlets to follow suit, is not completely clear. An attempt has been made to sheet the blame to the journalist involved. Several publishing houses let it be known that the reporter had circulated a commercial proposal for a book about the Folkman research.

A more likely element in the blaze of uncritical publicity was the large profits anticipated to flow from any cancer cure. The stockmarket responded to the *New York Times* article by sending the price of pharmaceutical company shares soaring. Spearheading the frenzy was EntreMed Inc, the company involved in the research and manufacture of angiostatin and endostatin. Its stocks quadrupled in value -- from $160 million to $641 million -- virtually overnight.

Cancer treatment is big business. Unlike say malaria which kills millions of people each year, mainly in the Third World countries of Asia, Africa and Latin America, many types of cancer are prevalent in the major industrialised countries -- across all classes in society. The giant pharmaceutical companies heavily fund cancer research which is likely to lead to products marketable to those who can afford to pay.

In such an atmosphere, it is little wonder that a promising new cancer treatment is reported more like a new oil exploration find in Borneo or a gold strike in Africa, than soberly assessed for its likely benefits for millions of patients around the world.