

Cancer expert warns of too-great expectations

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Harold Elliot Varmus, an American Nobel prize-winning scientist for his discovery of the cellular origin of retroviral oncogenes, in Toronto on Wednesday. (*Arantxa Cedillo/Globe and Mail*)

One of the world's top cancer scientists used the language of baseball Wednesday to predict that research into the disease over the next 10 to 20 years will be measured by singles and doubles but not home runs.

Nobel laureate Harold Varmus, head of New York's Memorial Sloan-Kettering Cancer Center, said one of the inherent difficulties in continuing to raise funds for cancer research is to explain to people how difficult the problems are that still lie ahead.

"These problems are really, really tough, and they're going to be knocked off more or less one by one," he said in an interview in Toronto, where he received one of Canada's highest-profile medical awards, the Henry G. Friesen International Prize in Health Research.

Unrealistic expectations of an imminent cure for cancer have been around since former U.S. president Richard Nixon declared war on the disease in his 1971 State of the Union address, Dr. Varmus said.

They have been fuelled, he said, by a continuous stream of media articles that trumpet some initiative such as the completion of the genome project and then predict a payoff never matched by reality.

And he argued that the culture of unrealistic expectations is encouraged by the way science is taught in schools, with a focus on outcomes rather than process.

Dr. Varmus, a lean, athletic 68-year-old, shared the 1989 Nobel Prize for medicine with the discovery that certain genes that guide normal growth in cells can be converted into cancer-causing genes – called oncogenes – that transform healthy cells into tumour cells. His work has been credited with revolutionizing cancer research.

He received the Friesen Prize for his leadership and innovative contributions to medical research and promotion of science over the past four decades.

What researchers now unequivocally know is that cancer is not one disease but many diseases where the machinery of a cell is disordered by mutations.

Dr. Varmus said the challenge lies in how to define those disorders and figure out ways to restore the correct balances and forces in cells that lead them to grow or not to grow, die or not to die, become different or not become different.

“These are incredibly complicated scenes that we're only beginning to understand thanks to the genome project and spinoffs from the genome project.

“And the hope that advocacy groups understandably have – that if we just do a little bit more research and apply it at the bedside, that we're going to cure cancer – is really terribly simplistic.

“And when scientists give support to that simplistic notion, which they are likely to do because it's the way of raising money, they create an expectation that's very hard to meet.”

Cancer researchers have made dramatic progress on a number of fronts, he said – citing successes with pediatric cancers, testicular cancer and myelogenous leukemia, a type of bone-marrow cancer.

He described these targeted therapies as “remarkable – they show us how the job can be done for some selected cancers. But no one should be allowed to make the leap that if you can do it for Lance Armstrong you can do it for everybody,” a reference to the seven-times winner of the Tour de France who survived testicular cancer.

Dr. Varmus said, “I think it's safe to say that over the next 10 to 20 years we're going to be much more successful in controlling growth of cancer cells, in [controlling] the progression of the disease by targeted therapies. But it's going to be singles and doubles but not home runs.”