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SUBJECT Segment 3: The Nature of Cancer

DAVID BRINKLEY: Our Segment 3 this evening: some genuinely interesting research into the basic nature of cancer, a disease that after years of work and billions of dollars still kills three-quarters of a million Americans every year.

Now a group of researchers, independently of each other, say they believe cancer is caused by a microbe that produces its own protective hormone. If so, it is possible that sometime in the future there may be a vaccine to prevent cancer.

Roy Neal has looked into this.

ROY NEAL: These are living cells from a cancer patient seen through a microscope. Healthy cells show up as clear circles, but many of these cells have spots inside, spots that Dr. Virginia Livingston Wheeler says are microbes, tiny living parasites that have invaded the cells and are causing cancer.

DR. VIRGINIA LIVINGSTON-WHEELER: This is a field of heavily involved red blood cells. They all have a parasite inside of them. And here, here, here and here, these are a few of the parasites outside. This cell doesn't show the parasite too well, but it is a glimmering. There's a glimmering effect here, showing that it's inside.

NEAL: The theory that microbes cause cancer is not new. What is new is that Dr. Livingston-Wheeler says she has discovered that the microbes produce their own protection, a hormone which allows the cancer to grow by shutting out the body's defenses.

Other scientists have picked up the protective hormone theory, among them Dr. Hernan Acevedo, a biochemist. Dr. Acevedo

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and his associates have exposed hundreds of cancerous tissues to chemicals which glow only when the hormone is present. The result: the cancerous tissues stand out like beacons, leading the scientists to believe that the hormone may be common to all cancer. That is something that cancer researchers have been looking for.

DR. HERNAN ACEVEDO: We have found this property, this common property in every cancer cell, in the test tube, in the experimental animal, and in the human being, disregarding in which way the cancer was produced. It doesn't matter if it is produced by a virus, it doesn't matter if it's produced by a carcinogenic agent; it is always present, as far as we have investigated, without any exception.

NEAL: To further test the theory that microbes producing a protective hormone cause cancer, samples of cancer tissue from human patients were sent to a laboratory that specializes in making vaccines. The Biomed Lab isolated the microbes from the cancer cells, then used them to make an experimental anti-cancer vaccine. Mice were injected with live cancer tissue to induce the disease. These mice, for example, have cancer. You can see it in the tumors on their flanks. Eighteen hundred mice were injected; half of them were given the anti-cancer vaccine. All of the mice that were not vaccinated developed cancer. But about 70% of the vaccinated mice did not get cancer, even though they had been injected with cancer.

By medical standards, 70% is considered very effective. It has convinced the researchers that they are on the right track in believing that hormone-protected microbes cause cancer.

Despite all that evidence, these researchers have been frustrated in their efforts to go further. They would like to see large-scale testing of their theories, but Dr. Acevedo's continuing requests for research money have been turned down. They were labeled interesting by review boards, and he was told to try again next year.

Dr. Livingston-Wheeler has had to fund almost all of her research with money earned by the cancer clinic she runs.

The senior vice president of the American Cancer Society, Dr. Frank Rauscher, agrees that the research is promising, but says there just hasn't been enough research money to go around.

DR. FRANK RAUSCHER: The American Cancer Society this year can only pay something like 20% of its approved applications. The National Cancer Institute, I understand, will pay something like 35% of approved applications. So it's a matter of priority and enough funds.

NEAL: So, unless or until more money is made available for extensive research into microbes and their protective hormone,

we won't know if these researchers have the answer to what causes cancer, or if they'll be able to develop a vaccine to prevent it in humans.

BRINKLEY: Again, there is no vaccine yet. And if there is one, it is sometime in the future. But our report showed some interesting work that may in time bring dramatic results, but not yet.