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Fishing for Viruses



Even Good Researchers Sometimes Use Wrong Bait

By *Nicholas Regush*

Let me lay it on the line for you: I have never once thought — or written — that hepatitis C is a psychological problem. I have no doubt whatsoever that people have developed liver scarring and that many have developed liver disease and died from it.

But after 30 years of reporting on science, I can sometimes smell a skunk. This time, the skunk is a so-called virus called hepatitis C virus (HCV), which is blamed for much of the severe liver disease people suffer.

No one's been able to come up with a hepatitis C virus, purify it, inject it into an animal and cause hepatitis. (ABCNEWS.com)

SUMMARY

The illness known as hepatitis C definitely exists, but it has never been shown to be caused by a virus, suggests our columnist.

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For more information about hepatitis C, check this out.



COMMENTARY

I certainly feel compassion for people who become ill with liver disease. But I have less than nice feelings for scientific enterprise that is shallow and takes red-flag shortcuts, which is exactly what I have concluded has occurred with the science underlying the claim that a hepatitis C virus has been properly identified.

Flawed Fundamentals?

When you get beyond all the biotech smoke and mirrors — and you need to take time to travel through this fantasyland to appreciate the nuances — there are disturbing issues about HCV that must be raised, particularly when it is said to have infected some 4 million Americans, the vast majority of whom have no symptoms and have been frightened out of their wits that they'll eventually develop fatal liver disease.

HCV is said to spread through direct contact with contaminated blood; that means through such routes as sex, sharing needles for drug use and, of course, blood transfusions, particularly from the 1960s through the '80s when the blood supply wasn't adequately tested for HCV.

The stakes here are obviously very high for people diagnosed with HCV and for society in general. We'd better have good fundamental science serving as the foundation for very expensive testing programs, treatment regimens and public health promotion about a "hidden epidemic" on the rampage.

Molecular Misdirection

Keep in mind that it takes only a handful of researchers and some good marketing to set others on a course that, even if misdirected, becomes difficult to reverse. This is particularly true in today's world of molecular biology, in which basic discoveries, in the form of molecular products or tests, are often accepted without challenge as baselines for further research, and, of course, the scramble for research dollars.

Most doctors who see patients must accept this basic science on blind faith, due to their own lack of scientific expertise or the time to read the research papers. They then pass on their accepting views to patients, who typically assume they've been told "the

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truth.”

In 1987, a scientific research team went on the hunt for a virus to explain liver disease linked to what was then called non-A non-B hepatitis. The team, including scientists from the CDC, Chiron Corp. and others, claimed to have detected HCV.

But to this day, no one has ever been able to isolate such a virus in an intact form, nor has anyone been able to grow it in a culture. And no one has been able to fish out such a virus, purify it (meaning separate it from a cell), inject it into an animal and cause hepatitis. No one has ever been able to document, according to basic long-held standards of virology, that such a proposed virus is infectious. No one.

Fishing Expedition

From the beginning, the researchers presumed too much in making their claim. They began by injecting blood from hepatitis patients into chimps. In half of the animals, they noted signs of infection in the form of a biological marker of hepatitis called alanine aminotransferase. The injected blood, however, did not cause hepatitis. That should have been a big red flag. The marker they detected may have had nothing to do with a virus. In any case, the scientists began fishing in liver tissue to find one.

What they found, with the use of high-tech amplification tools, was essentially a small piece of genetic information (encoded in ribonucleic acid, or RNA). On the basis of tests to reconstruct pieces of what they believed was a virus, they presumed that this bit of RNA was foreign and viral — even though they had no basic evidence that their “catch” behaved like a virus.

But never mind. Just clone the pieces of genetic information; work out the genetic sequences; using indirect methods, generate proteins presumably coming from a virus’s genetic code; create an antibody test against this genetic information; test many patients who turn out to be positive against this genetic information — and lo and behold, you have an epidemic.

Marketing Science

Then, of course, all of the followers of the leaders must then publish thousands of scientific papers (which they did) studying the bits and pieces of genetic information presumed to be a virus. And they must do so to keep their labs going, particularly at a time when everyone is clawing for research support to keep their academic enterprise alive.

This is not science. When you generate the basis of an epidemic and nowhere have you properly isolated the virus and shown it to be infective and disease-causing, you are making a mockery of the scientific method.

Now what about this “genetic information” that is presumed to be a virus? Some scientists have already suggested, on the basis of highly-detailed research (published in 1997) on cells from healthy human subjects who aren’t antibody positive to HCV, that some of that so-called viral genetic information may be similar to what is found normally in human cells — specifically, cell-escaping sequences of DNA via its RNA messenger. In other words, some of the genetic information thought to be a virus may actually have a human origin. How very intriguing.

Rule Out Before Ruling In

But to a thoughtful molecular biologist, such a proposition makes a lot of sense. One of the people I consulted was Richard Strohman, professor emeritus of molecular and cell biology at the University of California. Strohman points out what any reasonable molecular biologist should know: toxic hits, say, for example, smoking and alcohol consumption, can traumatize the liver and cause some genetic instability in its cells. In other words, the human cell itself can certainly be the source of the kind of genetic information caught in a molecular fishing expedition and presumed to be viral. Before jumping on a viral bandwagon, every effort should be made to thoroughly rule this out. It bothers Strohman that in the case of HCV, it has not.

It also bothers him that the supposed detection of the HCV has been credited for lowering the post-transfusion rate of non-A non-B hepatitis. Better screening equals much less infection, or so goes the logic. But this is another example of pole-vaulting. There may be other reasons for the decline, including the elimination of many donors at risk for AIDS.

Direct Evidence?

In last week’s column, I raised the challenge to the scientific community to send me some evidence that a virus exists. The fact is, a virus might indeed exist and contribute to non-A non-B hepatitis, but the evidence so far is only indirect and circumstantial and, I believe, highly misleading, given the extreme to which it has been pushed.

I have some time I can set aside later this summer to debate anyone from the molecular biology establishment who has been at the forefront of the discovery of HCV. No pretenders to the throne or angry followers of the leaders need apply.

In the meantime, given the huge amount of tax dollars being appropriated and the numerous biotech industry programs that have emerged to fight HCV, I plan this week to contact a congressional committee known for its investigation of scientific issues and ask that they seriously consider launching a probe of the science behind this vapor-like

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virus.

Next week, I'll focus on some of the important issues hepatitis patients are raising about their disease and the science and doctoring behind it. ■



Nicholas Regush produces medical features for ABCNEWS. In his weekly column, published Wednesdays, he looks at medical trouble spots, heralds innovative achievements and analyzes health trends that may greatly influence our lives. His latest book is [The Breaking Point: Understanding your Potential for Violence](#).



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