New Drug Promises Better Vision for Folks with AIDS

FDA approval of fomivirsen is likely, despite some scientists' criticism of its small-scale clinical trials by Bob Roehr

By a 5-2 vote, an advisory committee of the federal Food and Drug Administration recommended approval of fomivirsen, trade name Vitravene, for the treatment of cytomegalovirus retinitis, an opportunistic infection sometimes found in those with advanced-stage AIDS.

The vote occurred July 22.

Cytomegalovirus retinitis is an eye disease that causes progressive scarring of the retina and loss of sight. It cannot be reversed, but successful therapy may hold the infection in check and prevent further deterioration of vision.

A few drugs have already been approved for treatment of the disease, but each has disadvantages in terms of side effects, and some patients have developed viral resistance to one or more of those therapies.

Dr. Daniel L. Kisner is president of Isis Pharmaceuticals, the company that developed the drug. He says it works one step further back in the process of inhibiting viral reproduction than do existing therapies. It binds to messenger RNA of the cytomegalovirus when it divides and prevents its reproduction. Fomivirsen is injected directly into the eyeball to prevent development of the infection.

Thanks to protease inhibitor therapy, fewer people are suffering from opportunistic infections like cytomegalovirus retinitis. At the same time, the pool of potential patients to enroll in clinical trials has grown markedly smaller.

The FDA initially recommended the company not submit fomivirsen for approval, according to FDA medical officer Dr. Wiley Chambers.

"But with the inability to recruit additional patients, additional progress was not being made," he admits.

The agency acknowledged that reality, though it would have liked a larger patient sample.

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Chambers conceded the product showed efficacy, but he was not as convinced of its magnitude. Because the studies were "underpowered," with smaller than desired numbers of participants, he said it only takes a couple of patients to have a tremendous impact on the interpretation of data.

The committee grappled with this fact.

Dr. Christopher Mathews from the University of California at San Diego Medical Center concluded, "I don't think you will ever see a comparison trial with numbers that will be convincing" because of the decline in cases of opportunistic infections.

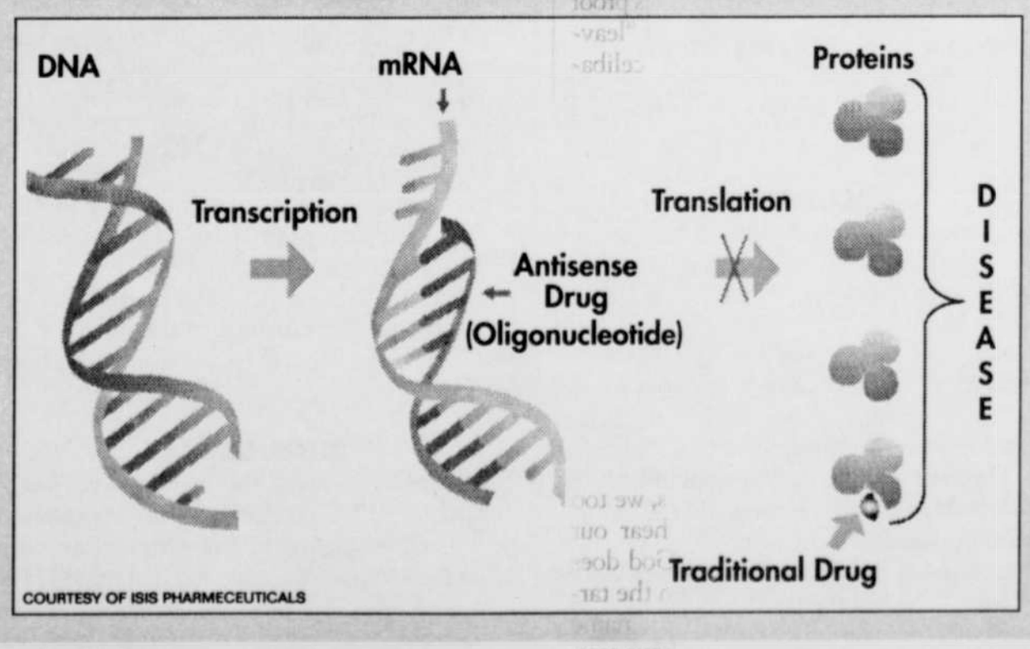
The FDA will likely follow the committee's recommendation, and Vitravene should become available in the fall.

How the Drug Works

Fomivirsen is part of a new class of drugs called antisense oligonucleotides.

Antisense drugs work at the genetic level to interrupt the process by which disease-causing proteins are produced. Proteins play a central role in virtually every aspect of human metabolism. Almost all human diseases are the result of inappropriate protein production or disordered protein performance. This is true of both host diseases, such as cancer, and infectious diseases, such as HIV.

Traditional drugs are designed to interact with protein molecules throughout the body that support or cause diseases. Antisense drugs, on the other hand, are designed to inhibit the production of disease-causing proteins. They are designed to be more selective and, as a result, more effective and less toxic than traditional drugs.



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