AVI BioPharma Reports Results on Hepatitis C Virus Clinical Trial

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PORTLAND, Ore.--(BUSINESS WIRE)--Oct. 4, 2006--AVI BioPharma, Inc. (Nasdaq:AVII) reported results today from the second phase of its multicenter study in patients with chronic active hepatitis C virus (HCV) infection. The second phase of this exploratory trial was designed to assess the safety, tolerability, pharmacokinetics (PK), and viral and clinical response to treatment with AVI's proprietary NEUGENE(R) antisense compound, AVI-4065, in HCV patients. Preliminary results from this study were presented in May at the International Conference on Antiviral Research (ICAR).

AVI-4065 exhibited favorable safety and tolerability profiles in the 12 patients completing the clinical treatment phase of the protocol, with no serious drug-related adverse events or tolerability issues observed during treatment or follow-up. Consistent with the preliminary results, the therapeutic threshold required for efficacy of the drug was not achieved at the treatment dose used in this protocol.

Significant differences were observed in the plasma PK in patients compared with what was noted in healthy volunteers: notably, a longer plasma half-life (approximately 26 hours compared with 13 hours), a lower peak plasma concentration (initially 1.2 compared with 1.6 ug/ml), and a slower plasma clearance (approximately 15 compared with 40 ml/min). These observations demonstrate a direct pharmacodynamic response to HCV infection.

The peak plasma concentration (Cmax) was expected to reach the predicted therapeutic threshold of approximately 3.5 ug/ml during the treatment protocol, but rose to only 2.0 ug/ml after 14 days of therapy. With an initial Cmax of 1.2 ug/ml and final Cmax of 2.0 ug/ml, the therapeutic threshold predicted from preclinical models to be required for efficacy was not achieved.

Based on these observations, AVI does not expect a clinically relevant reduction in viral titer at the treatment dose used in this protocol; nor was one observed in the 12 treated HCV patients analyzed as a group. The trend in viral responses in HCV patients dosed subcutaneously at 100 mg twice a day for 14 days was similar to that reported in preliminary data in May, ranging from 0 to 0.8 log reduction. Of the two ways to increase Cmax to reach the predicted therapeutic threshold (increase treatment duration or increase dose), the data appear to support a significant increase in dose in order to exceed the 3.5 ug/ml predicted therapeutic threshold for efficacy.

"Although it is always disappointing not to achieve clear clinical success on an initial trial targeting a new disease, it is encouraging that we observed a significant pharmacodynamic effect that we believe can be fine-tuned to provide a clinical benefit," said Denis R. Burger, Ph.D., AVI chief executive officer. "We are fortunate that NEUGENE antisense technology provides flexibility for clinical protocol modification."

Based on these data, AVI has initiated a protocol modification to increase treatment duration. The company is also in the process of planning an additional protocol to significantly increase the treatment dose in order to exceed the therapeutic threshold predicted from preclinical models. Preclinical studies to support increasing the dose by more than tenfold have already been completed.

The first phase of this study, completed in March 2006, evaluated 31 healthy volunteers who received 14 consecutive days of treatment with AVI-4065 at three dosage levels. In the second phase of this clinical trial, patients with HCV were stratified into two cohorts, one composed of patients who had not received previous treatment and the other composed of patients who failed conventional interferon and ribavirin treatment. In addition to efficacy as measured by HCV virological responses to treatment with AVI-4065, the study assessed the safety, tolerability and pharmacokinetics of the compound.

HCV is a single-stranded RNA virus. Because HCV and other single-stranded RNA viruses have relatively simple genetic structures, they are attractive targets for AVI's NEUGENE antisense, which is designed to target conserved portions of the viral genetic code that are not likely to mutate over time.

About Hepatitis C Infection

Chronic HCV infection causes an inflammation of the liver that can result in the development of cirrhosis, liver cancer or liver failure. According to the World Health Organization, approximately 170 million people worldwide are chronically infected with HCV. It is the most common chronic blood-borne infection in the developed world and the leading cause of liver transplants in the U.S. The Centers for Disease Control and Prevention estimate that approximately 3.9 million Americans have been infected with HCV, of whom 2.7 million are chronically infected.

The Hepatitis Foundation International estimates that between 8,000 and 10,000 people die annually in the U.S. from HCV-related cirrhosis or liver cancer. The current treatment for HCV, 24 to 48 weeks of therapy with pegylated interferon alpha and ribavirin, is successful in less than half of the patients infected with genotype 1 HCV, the most common form of the virus in the U.S. Furthermore, this treatment has numerous side effects, some of them severe, which make it difficult for nearly half of initially treated patients to tolerate the recommended dosages and duration of treatment.

About AVI BioPharma

AVI BioPharma develops therapeutic products for the treatment of life-threatening diseases using third-generation NEUGENE antisense drugs. AVI's lead NEUGENE antisense compound is designed to target cell proliferation disorders, including cardiovascular restenosis, cancer and polycystic kidney disease. In addition to targeting specific genes in the body, AVI's antiviral program uses NEUGENE antisense compounds to combat disease by targeting single-stranded RNA viruses, including West Nile virus, hepatitis C virus, dengue virus, Ebola virus and influenza A virus. AVI has introduced a NEUGENE-based exon-skipping technology called ESPRIT therapy. More information about AVI is available on the company's Web site at http://www.avibio.com.

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efforts, the results of preclinical and clinical testing, the effect of regulation by the FDA and other agencies, the impact of competitive products, product development, commercialization and technological difficulties, and other risks detailed in the company's Securities and Exchange Commission filings.

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