Antiviral therapy during compensated cirrhosis most cost-effective approach

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Researchers at the UCLA Medical Center found that antiviral therapy during compensated cirrhosis, when compared with all other strategies, is the most cost-effective approach to treating patients with advanced liver disease due to hepatitis C (HCV) infection. Full details appear in the June issue of *Liver Transplantation*, a journal published by Wiley-Blackwell on behalf of the American Association for the Study of Liver Diseases (AASLD).

HCV is generally treated once significant scarring has occurred but before patients develop advanced scarring, i.e. cirrhosis. The standard antiviral regimen used to treat HCV—pegylated interferon and ribavirin (PEG/RBV)—can cause harsh side effects and is considered by some medical professionals to be of uncertain benefit in patients with advanced liver disease.

Furthermore, HCV genotype 1, the type that afflicts most HCV patients, is least responsive to antiviral treatment. According to the HCV Advocate, genotype is the most important predictor of successful treatment response and also dictates the dose of ribavirin and length of therapy. People with genotype 1 have about a 50% chance of successful treatment and people with genotypes 2 or 3 have about a 70-90% chance of a successful treatment response. In addition, people with genotypes 2 or 3 are prescribed a lower dose of ribavirin than people with genotype 1.

Using a Markov model, the UCLA team set out to determine the most

cost-effective timing for PEG/RBV therapy in patients with advanced liver disease infected with genotype 1 HCV by comparing treatment at different stages of advanced HCV disease over a 17-year period.

The study population of 4,000 patients was evenly divided into 4 different treatment strategies. The control group did not receive antiviral treatment. In the first treatment strategy, antiviral treatment was initiated in patients with compensated HCV cirrhosis. In the second treatment strategy, patients were treated only after development of decompensated liver disease. In the third treatment strategy, patients were treated only after development of histological evidence of advanced fibrosis due to HCV recurrence post-transplantation based on annual protocol graft biopsies. The duration of therapy was deemed to be 48 weeks. Response to treatment was classified as sustained viral response (SVR) or no SVR.

The UCLA researchers conclude that the model proves treatment of patients with compensated cirrhosis is the most cost-effective strategy, resulting in improved survival and decreased cost when compared with the other strategies. Treatment of patients with decompensated cirrhosis, or those with advanced graft fibrosis due to HCV recurrence, were also found to be cost-effective, but these patients derived less survival benefit at greater cost when compared to patients treated during compensated cirrhosis.

"This study provides pharmacoeconomic evidence in support of treating HCV in patients with compensated cirrhosis before progression to more advanced liver disease, said study leader Sammy Saab, M.D. "Given the results of this study we strongly recommend expeditious administration of antiviral therapy to patients with compensated cirrhosis before their disease advances."

In an editorial in this month's issue, Marina Berenguer, M.D., while agreeing with the recommendation by Saab and colleagues, identifies

flaws with the study methodology, stating, "There are clear limitations in the use of these models, mostly due to the assumptions in which they are based. The lack of subgroup analysis, the use of some unproven assumptions, and the lack of multivariate sensitivity analysis are important limitations of the model in this very complex scenario where so many variables may play an important role. Physicians must decide whether the most cost-effective approach is the most appropriate one in each individual."

More information: "Timing of Hepatitis C Antiviral Therapy in Patients with Advanced Liver Disease: A Decision Analysis Model." Sammy Saab, Douglas R. Hunt, Michael A. Stone, Amy McClune, Myron J. Tong. Liver Transplantation; Published Online: March 23, 2010 (DOI: 10.1002/lt.22072); Print Issue Date: June 2010.

Editorial: "An Economic Analysis of Antiviral Therapy in Patients with Advanced HCV-Disease: Still Not There!" Angel Rubin, Marina Berenguer. Liver Transplantation; Published Online: April 28, 2010 (DOI: 10.1002/lt.22090); Print Issue Date: June 2010.

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