

Data suggest liver experts should take care when prescribing novel antiviral HCV drugs

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Data presented at the International Liver Congress highlight the fact that new novel antiviral compounds for the treatment of hepatitis C virus (HCV) must be prescribed and monitored by experts and specialists to ensure resistance is minimised.^{1,2,3,4,5,6}

Several studies observed the rapid onset of HCV resistance in patients treated with NS3-protease, NS5b-polymerase and NS5a inhibitors. Although these direct anti-virals are effective in both treatment-naïve HCV patients and those who've been previously unresponsive to current treatment options, the development of resistant viral variants may cause problems in the future. In fact, two studies found HCV strains resistant to novel antiviral compounds pre-existed in patients who had never previously been exposed to the new antiviral compounds. In these patients, the variants were selected out by treatment.

Professor Heiner Wedemeyer, EASL's Secretary General, said: "While the regulatory approval of these new treatments is a highly anticipated milestone in HCV therapy, these studies show that care must be taken in the prescription and use of the new compounds. What we want to avoid is a rapid spread of HCV resistance within the patient population, which could drastically lower the effectiveness of the [new drugs](#)."

The current standard of care for chronic HCV is the combination of pegylated interferon-alfa and [ribavirin](#), but only 40-54% of patients infected with HCV genotype 1 achieve a sustained virological response (SVR).^{7,8} Novel antiviral therapeutics are much sought after to treat

patients who don't respond to the current standard of care. As such, a large number of new drugs for HCV are at various stages of preclinical and clinical development.⁹

However, as each new copy of the HCV genome exhibits on average one nucleotide change per replication cycle, HCV's replication machinery allows the virus to quickly come up with mutations that render it resistant to [antiviral drugs](#). This is a major concern for successful anti-HCV therapy.¹⁰

NS3 protease inhibitors block the function of the HCV NS3 protease, an enzyme essential for HCV's replication. NS5A replication complex inhibitors block the function of HCV nonstructural protein 5A, a multifunctional protein essential for HCV replication.¹⁰

More information: References

1. McPhee F et al. Characterization of virologic escape in HCV genotype 1 null responders receiving a combination of the NS3 protease inhibitor BMS-650032 and NS5A inhibitor BMS-790052. Abstract presented at The International Liver Congress 2011
2. Chevaliez S et al. Molecular characterization of HCV resistance to telaprevir by means of ultra-deep pyrosequencing: pre-existing resistant variants and dynamics of resistant populations. Abstract presented at The International Liver Congress 2011
3. Hebner C et al. Emergence and persistence of ns5b mutations following combination treatment with tegobuvir (gs-9190) plus standard of care--long-term follow-up from the phase iib study gs-us-196-0103. Abstract presented at The International Liver CongressTM 2011
4. Zeuzem S et al. Boceprevir Resistance-Associated Variants (RAVs)

are observed more frequently in HCV (gt1)-infected Patients with poor response to peginterferon alfa- 2B/ribavirin. Abstract presented at The International Liver Congress 2011 (1621)

5. Svarovskaia E et al. Abundant minority drug-resistant ns3 mutants detected by deep sequencing in hcv patients as early as 24 hours after initiating antiviral treatment. Abstract presented at the international liver congress 2011 (1773)

6. Sullivan J et al. Evolution of Treatment-Emergent Resistant Variants in Telaprevir Phase 3 Clinical Trials. (1783)

7. Fried M.W et al. "Peginterferon alfa-2a plus ribavirin for chronic hepatitis C virus infection." New England Journal of Medicine 347.13 (2002): 975-82

8. Hadziyannis S J et al. "Peginterferon-alpha 2a and ribavirin combination therapy in chronic hepatitis C - A randomized study of treatment duration and ribavirin dose." Annals of Internal Medicine 140.5 (2004): 346-55.

9. Shiffman M L. "Treatment of hepatitis C in 2011: what can we expect?" Curr.Gastroenterol.Rep. 12 (2010): 70-75

10. Raffaele De Francesco and Giovanni Migliaccio (2005). Challenges and successes in developing new therapies for hepatitis C. Nature, 436, 953-960

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