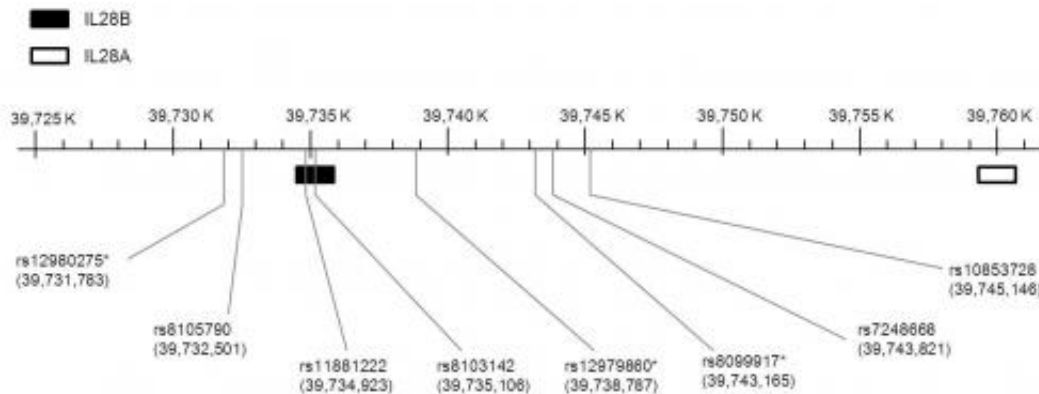


Targeting hepatitis C treatment: The importance of interleukin (IL)-28

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Polymorphisms (SNP) in the gene coding for interleukin-28 (IL28B) influence natural hepatitis C viral (HCV) clearance and response to pegylated interferon- α plus ribavirin (PEG-IFN/RBV). Credit: María A Jiménez-Sousa, Amanda Fernández-Rodríguez, María Guzmán-Fulgencio, Mónica García-Álvarez and Salvador Resino.

A metanalysis published in BioMed Central's open access journal *BMC Medicine* has confirmed that polymorphisms (SNP) in the gene coding for interleukin-28 (IL28B) influence natural hepatitis C viral (HCV) clearance and response to pegylated interferon- α plus ribavirin (PEG-IFN/RBV). Information about IL28B genotype could be used to provide personalized medicine and target treatment options effectively.

Over 200 million people worldwide are chronically infected with [hepatitis C virus](#) (HCV) and about a quarter of these will go on to

develop cirrhosis of the liver. Treatment with (PEG-IFN/RBV) only works in 40-80% of patients, depending in part on HCV strain, and treatment often has severe side effects. It is consequently important to separate people who will not respond to treatment, from those who may, so that treatment is targeted effectively.

Researchers from the Health Institute Carlos III, Spain, incorporated 67 studies that investigated IL28B polymorphisms with the suppression of [viral activity](#) to undetectable levels (sustained virologic response - SVR), and ten that looked at IL28B polymorphisms and spontaneous clearance, into a metanalysis. Approximately 23,500 people were included overall.

The results of this analysis showed that IL28B polymorphisms influence how well IFN treatment works and natural clearance of HCV infection. Having a favourable genotype at any one of seven IL28B polymorphisms equated to more than double the probability of achieving SVR. The study also found that two SNP were associated with spontaneous clearance. Detailed analysis showed that the effect of ethnicity and viral type also influenced the strength of individual association. Consequently the association between favourable variants and SVR for HCV types 2 and 3 was three times lower than types 1 and 4.

María Ángeles Jiménez-Sousa, Amanda Fernández-Rodríguez and Salvador Resino who led this study explained, "Treatment with (PEG-IFN/RBV) is costly and can have side effects which prevent patient compliance. Consequently knowing a patient's IL-28B status will help target interferon treatment to those who will benefit most, and play a substantial role in the selection of candidates for standard treatment versus triple therapy with direct-acting antivirals (DAA). Also, because IL28B genotyping needs be performed only once in a patient's life, it is relatively cheap."

More information: Meta-analysis: implications of interleukin-28B

polymorphisms in spontaneous and treatment-related clearance for patients with hepatitis C, María A Jiménez-Sousa, Amanda Fernández-Rodríguez, María Guzmán-Fulgencio, Mónica García-Álvarez and Salvador Resino, *BMC Medicine* (in press)

Provided by BioMed Central

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