Background and Objective

- Two single nucleotide polymorphisms (SNP, rs8099917, rs12979860) near the IL28B gene have been described independently from each other as outcome predictors of hepatitis C virus (HCV) treatment with pegylated Interferon and Ribavirin.
- HCV/HIV-coinfected individuals respond less effectively to this treatment than monoinfected patients.
- Still, only few data is available on the influence of these polymorphisms HCV/HIV-coinfected patients.
- Our aim was to analyze whether these two SNPs and two SNPs in linkage (rs28416813, rs8103142) within IL28B and their respective haplotypes have independent and/or cooperative impact upon HCV/HIV-treatment response in HCV/HIV-coinfected patients.

Results

- 255 HCV/HIV-coinfected patients were included in final analysis.
- Our study shows for the first time that IL28B gene variants are associated with HCV treatment response in HCV-infected individuals.
- Our study shows for the first time that IL28B polymorphisms have a cooperative effect on SVR in HCV/HIV-coinfected patients.
- Especially, analysis of rs8099917/rs12979860 haplotype:
  - can putatively improve treatment decisions, and
  - should be considered in further studies and algorithms in HCV/HIV-coinfected patients.

Methods

- Analysis on basis of the cohort of the German Competence Network for HIV/AIDS, with ~8.400 treated patients under follow up (April 2011).
- Inclusion criteria were:
  - validated HIV-infection and HCV-coinfected,
  - completed HCV-combination-therapy (pegylated Interferon and Ribavirin),
  - availability of outcome parameter sustained virological response (SVR) and genomic DNA.
- SVR was operationalized as
  - HCV-RNA = 0 at ≥ 22 weeks after end of therapy or
  - HCV-RNA = 0 at ≥ 94 weeks after start of therapy, if no end date of therapy was given.
- Genotypes were achieved by Pyrosequencing.
- Statistical analyses for allele, genotype and haplotype dependence of treatment outcome using SPSS 17.0 and Haploviev 4.0.

Conclusion

- IL28B gene variants are associated with HCV treatment response in HCV-infected individuals.
- Our study shows for the first time that IL28B polymorphisms have a cooperative effect on SVR in HCV/HIV-coinfected patients.
- Especially, analysis of rs8099917/rs12979860 haplotype:
  - can putatively improve treatment decisions, and
  - should be considered in further studies and algorithms in HCV/HIV-coinfected patients.

Contact

Dr. med. Hagen Bachmann
Institute of Pharmacogenetics, University Hospital Essen, Germany
Email: hagen.bachmann@uk-essen.de

PD Dr. Adriane Skaletz-Rorowski
Competence Network for HIV/AIDS
Ruhr-Universität Bochum, Germany
Email: a.skaletz@uk-ubochum.de
www.kompetenznetz-hiv.de