World Academy of Science, Engineering and Technology
International Journal of Biomedical and Biological Engineering
Vol:9, No:05, 2015

Qualitative Detection of HCV and GBV-C Co-infection in Cirrhotic Patients Using a SYBR Green Multiplex Real Time RT-PCR Technique

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Abstract : HCV and GBV-C belong to the Flaviviridae family of viruses and GBV-C is the closest virus to HCV genetically. Accumulative research is in progress all over the world to clarify clinical aspects of GBV-C. Possibility of interaction between HCV and GBV-C and also its consequence with other liver diseases are the most important clinical aspects which encourage researchers to develop a technique for simultaneous detection of these viruses. In this study a SYBR Green multiplex real time RT-PCR technique as a new economical and sensitive method was optimized for simultaneous detection of HCV/GBV-C in HCV positive plasma samples. After designing and selection of two pairs of specific primers for HCV and GBV-C, SYBR Green Real time RT-PCR technique optimization was performed separately for each virus. Establishment of multiplex PCR was the next step. Finally our technique was performed on positive and negative plasma samples. 89 cirrhotic HCV positive plasma samples (29 of genotype 3 a and 27 of genotype 1a) were collected from patients before receiving treatment. 14% of genotype 3a and 17.1% of genotype 1a showed HCV/GBV-C co-infection. As a result, 13.48% of 89 samples had HCV/GBV-C co-infection that was compatible with other results from all over the world. Data showed no apparent influence of HGV co-infection on the either clinical or virological aspect of HCV infection. Furthermore, with application of multiplex Real time RT-PCR technique, more time and cost could be saved in clinical-research settings.

Keywords : HCV, GBV-C, cirrhotic patients, multiplex real time RT- PCR
Conference Title : ICCMID 2015 : International Conference on Clinical Microbiology and Infectious Diseases
Conference Location : London, United Kingdom
Conference Dates : May 25-26, 2015