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Name of patient : Mr. Balwinder Singh  
Age : 41 Years  
Referred by : Dr. N S Malhi  
Sample Received on : 15/11/2006

Date : 16/11/2006  
Pt. No. : 59814  
Sex : Male  
Collection center : FIL

Name of Test : HCV Quantitative Real Time - PCR  
Specimen : Blood

Test Results

Test Description	Result (viral copies / ml)
HCV Quantitative Real Time - PCR	1,24,400 ✓

Test Report

HCV Quantitative Real Time - PCR : 1,24,400 viral copies/ml.

(One lakh twenty four thousand four hundred viral copies per ml)

Interpretation

HCV induces chronic hepatitis in 60-80% of infected individuals, which may further evolve towards cirrhosis in 20-30%, and may lead to Hepatocellular Cellular Carcinoma. HCV RNA is detectable in patients with chronic or acute hepatitis with/without liver cirrhosis. HCV Quantitative Real Time PCR assay is used to detect HCV viral load per se, even prior to immunological sero-conversion, and fluctuation of viremia in antibody-positive chronic patients undergoing therapy. Viral load measurements provide an indication of viral replication, and thereby serve as a valuable tool to guide initiation of therapy, therapy regimen and response to treatment. The method of choice for absolute quantitation of HCV particles, is Real Time PCR assay using flourescein Taqman probe a gold standard for HCV quantitation. The observed standard curve shown in the figure is plotted using serially defined copy numbers of HCV particles, cloned in a plasmid. Linearity of the standard curve validates the assay, as well as indicates the quality of the assay. Real Time PCR measures amplification in the exponential phase of the reaction, avoiding the errors introduced by the plateau effect in RT-PCR quantitation assays. The specificity of the assay is 100%, and the sensitivity of detection is 1-2 viral copies per reaction, equivalent to 100 viral copies per ml of plasma. The Real Time PCR assay is unique in its capacity of detection of two fold changes in the viral load. It is used for initial quantitation of viral load, and serial samples from a patient will enable assessment of efficacy of treatment. Improper specimen collection, handling, storage and transportation may result in a false negative result.

Reference :

- 1) Martell M, Gomez J, Guardia J, et al. 1999. High-throughput Real-Time Reverse Transcription-PCR quantitation of Hepatitis C Virus RNA. J.Clin Microbiol. 2: 327- 332.
- 2) Yang JH, Lai JP, Douglas SD, et al. 2002. Real-time RT-PCR for quantitation of hepatitis C virus RNA. J Virol Methods. 102: 119-128.

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